

FIG. 1A

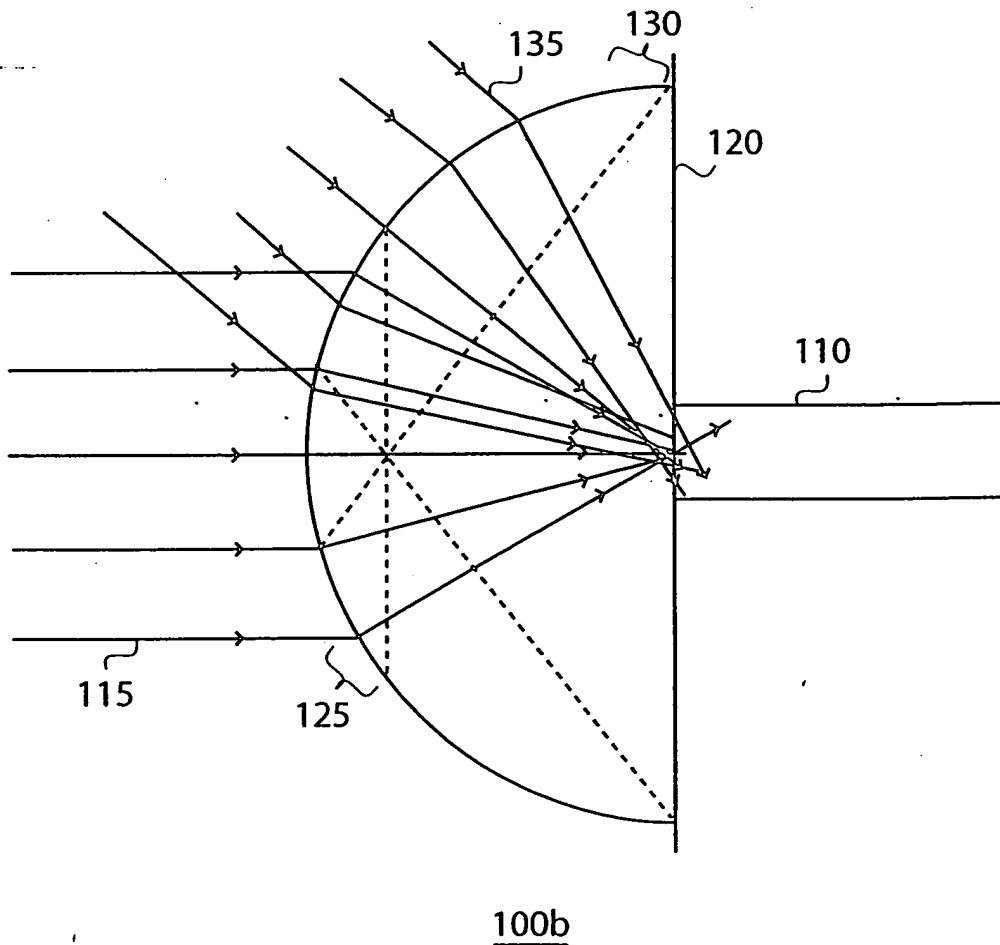


FIG. 1B

[illegible]

FIG. 2A

THE **WORLD'S** **LARGEST** **BOOKSTORE**

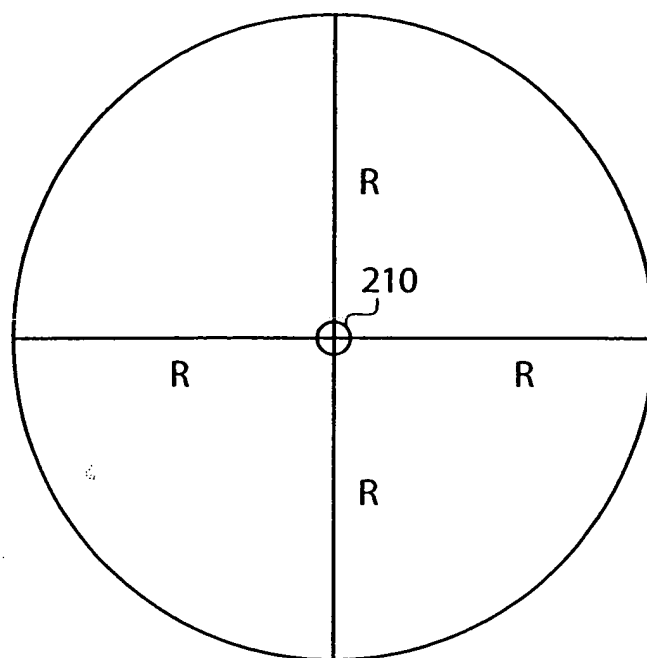


FIG. 2B

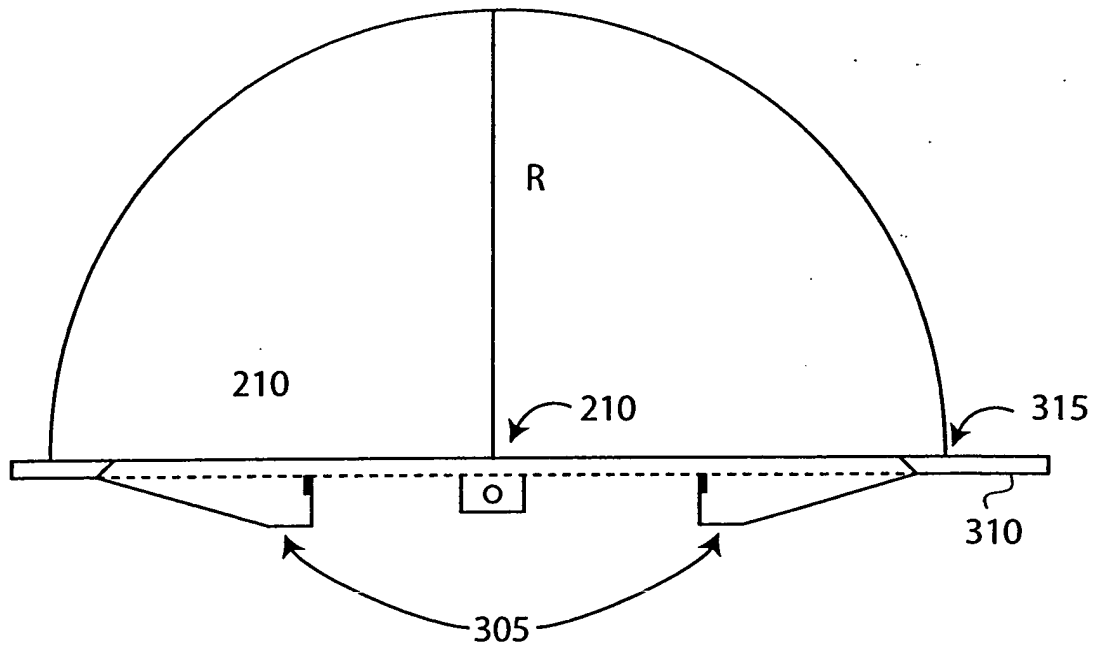


FIG. 3A

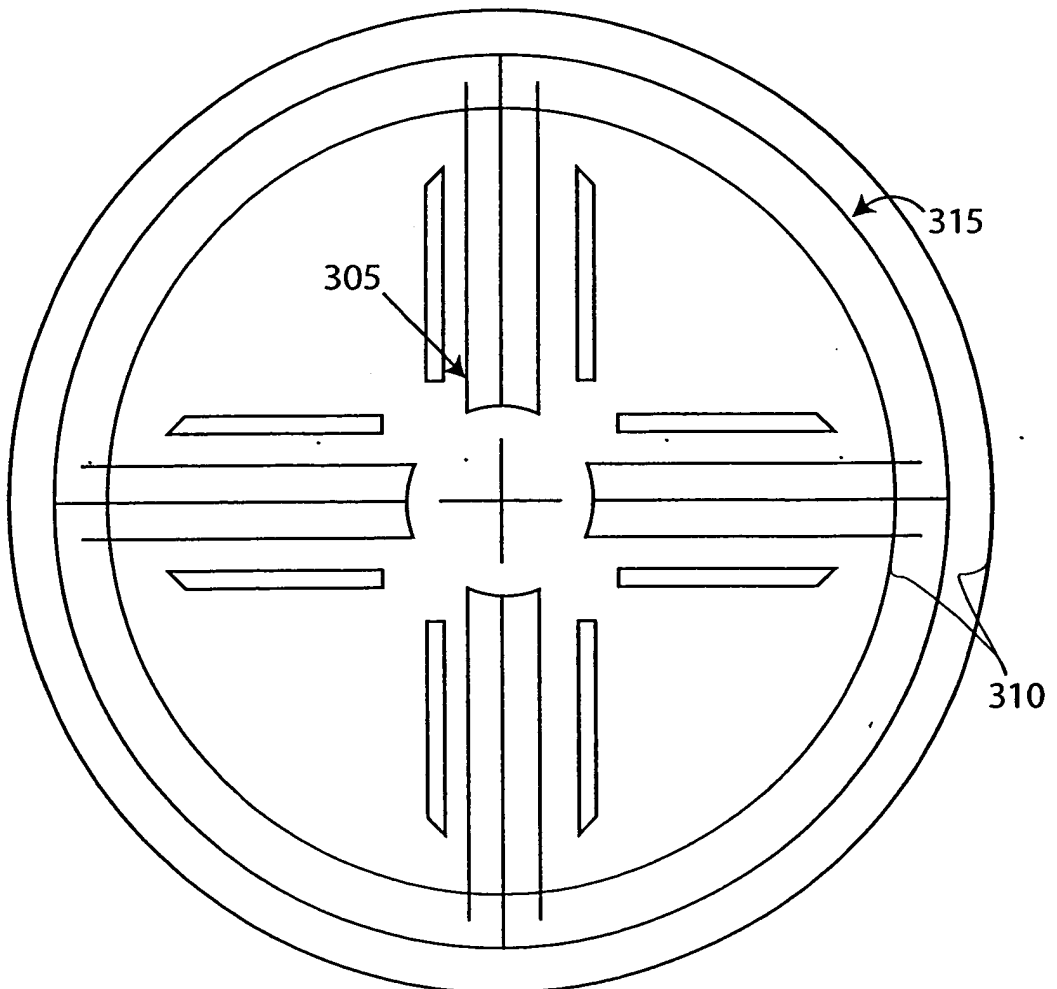


FIG. 3B

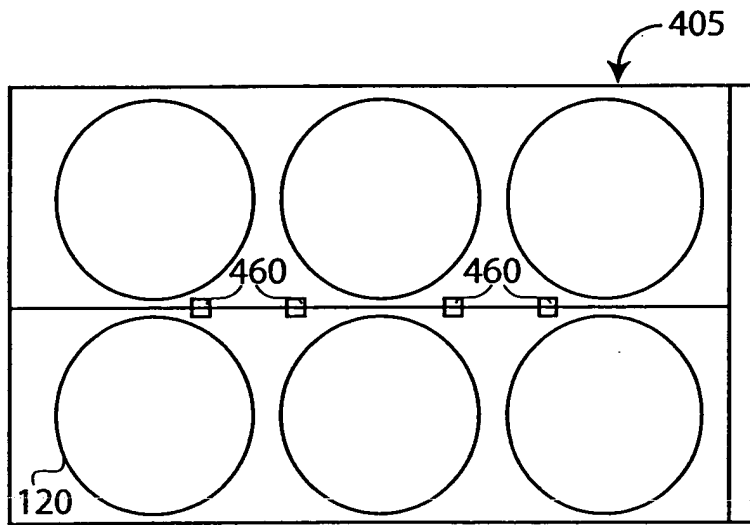


FIG. 4A

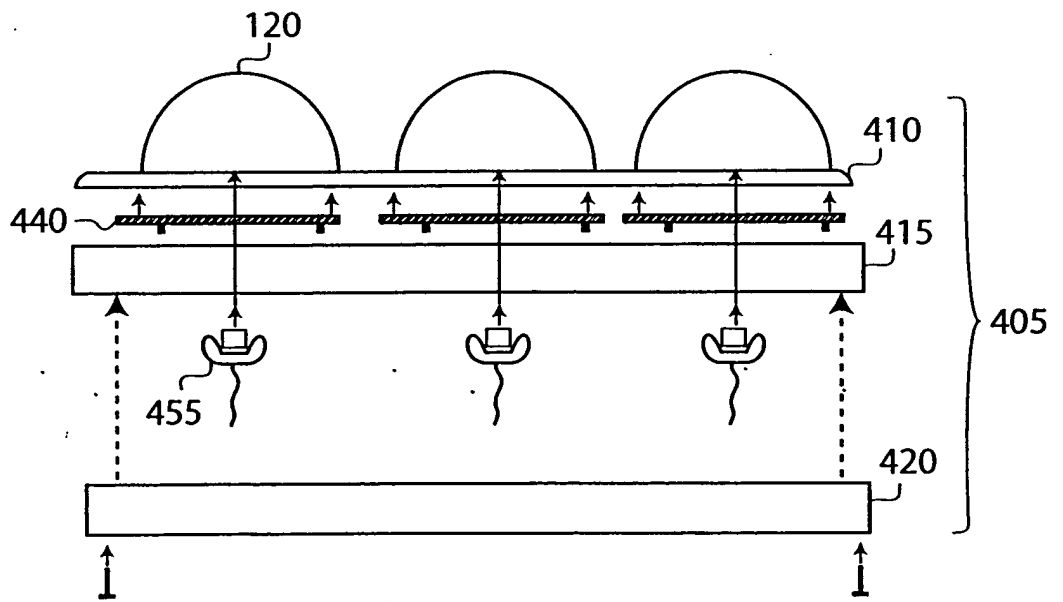


FIG. 4B

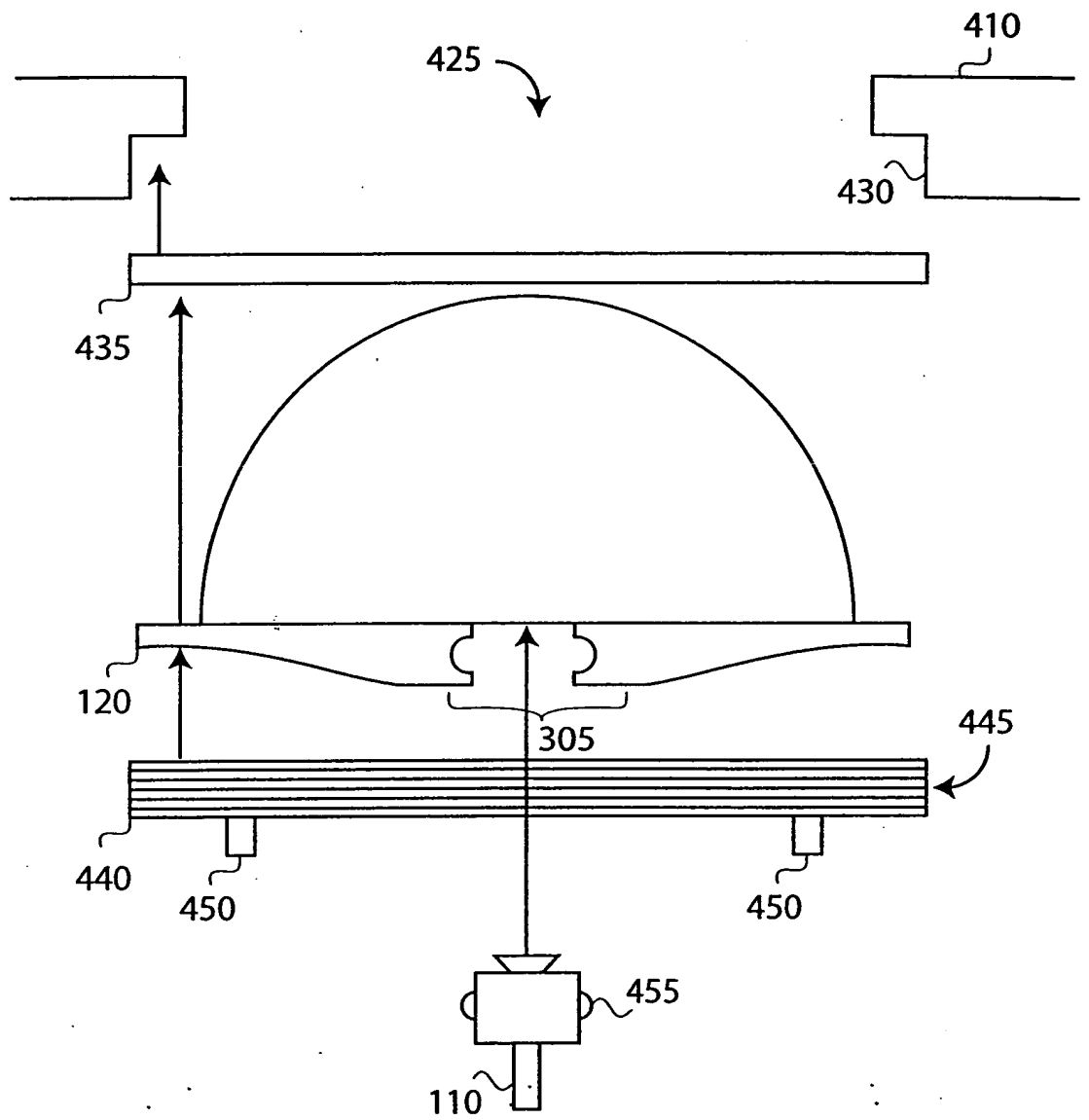


FIG. 4C

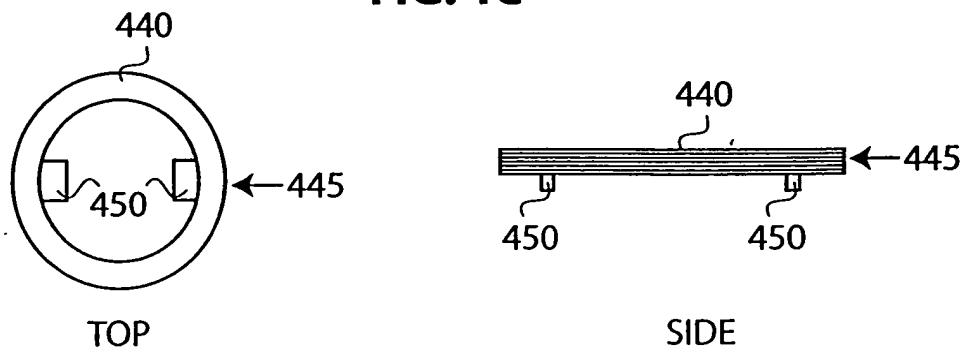


FIG. 4D

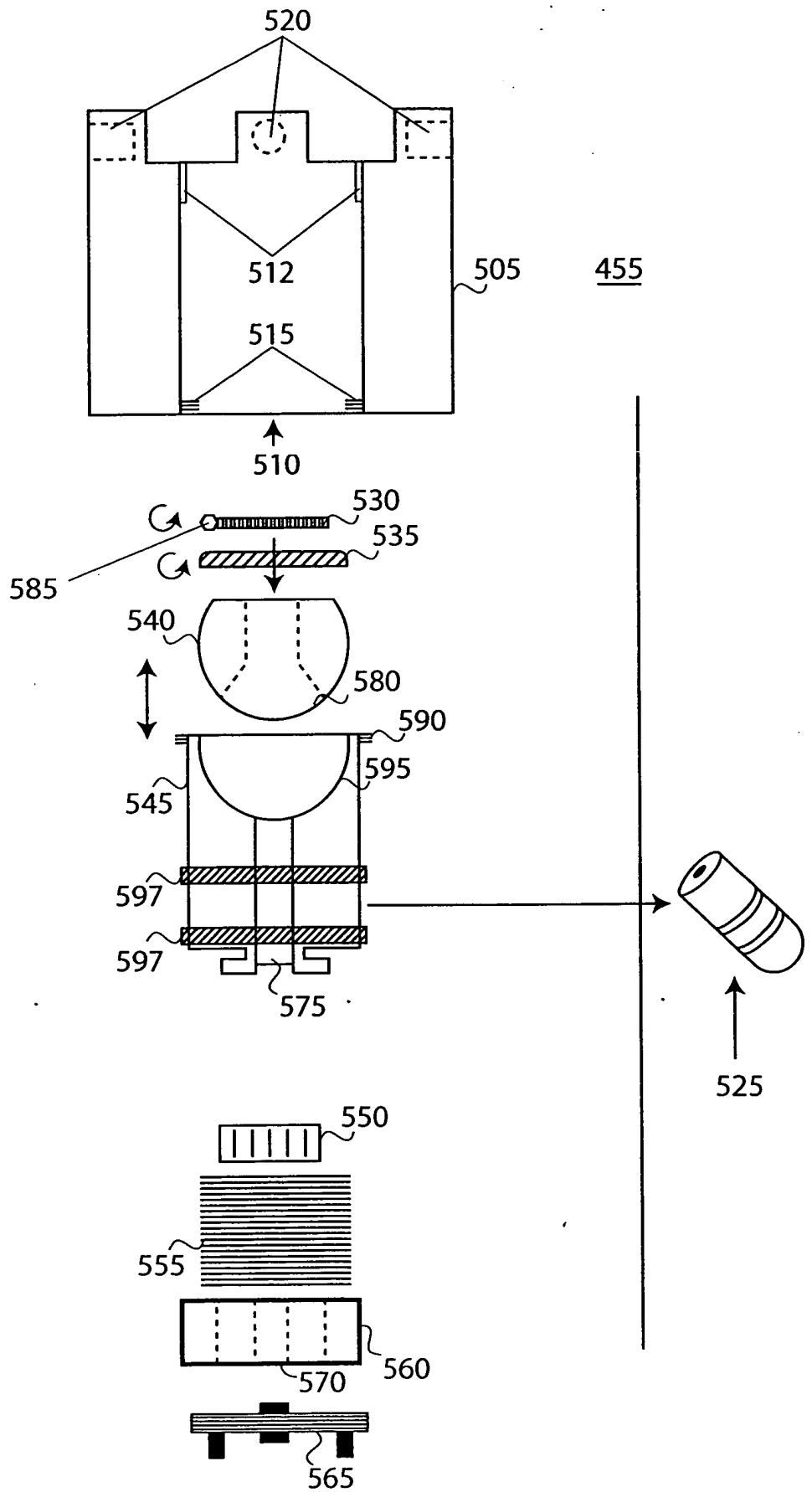


FIG. 5

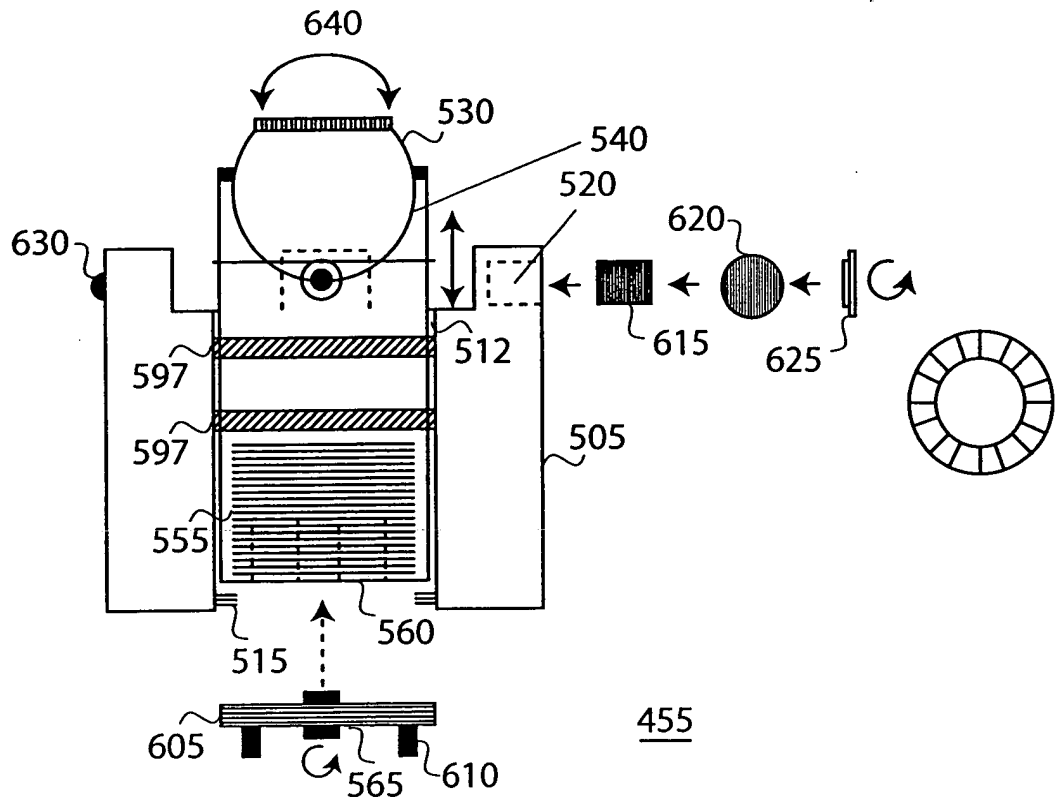


FIG. 6A

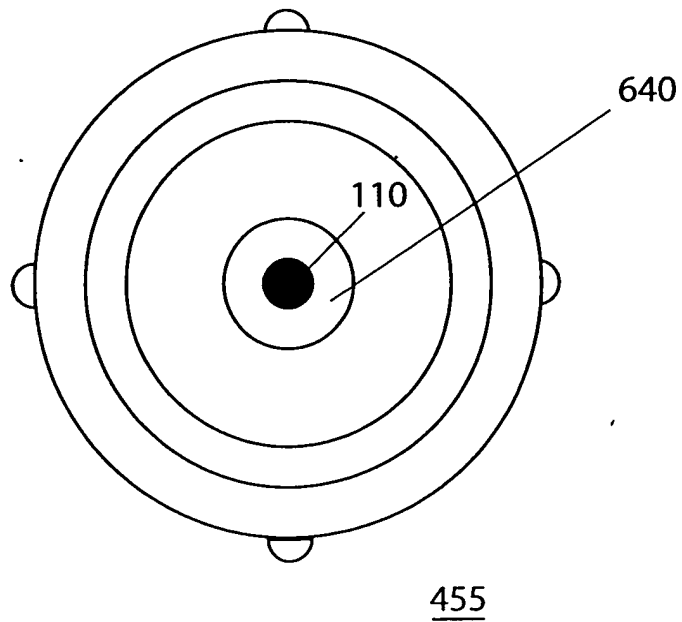


FIG. 6B

MIDDLE SECTION

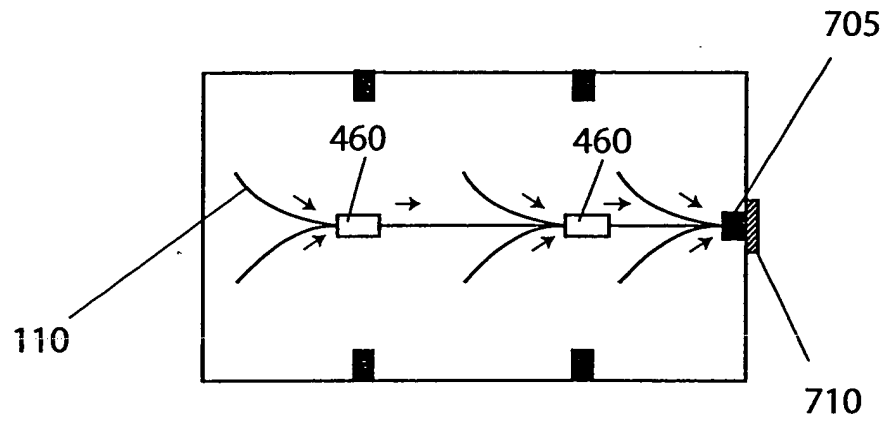


FIG. 7A

BOTTOM PANEL

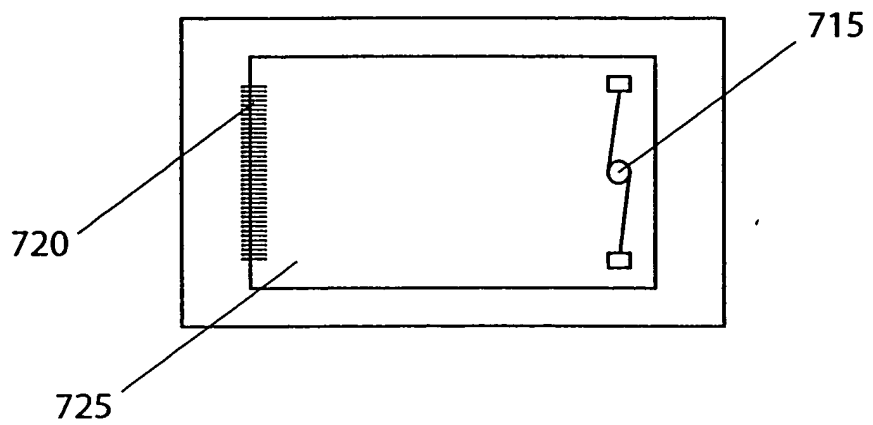


FIG. 7B

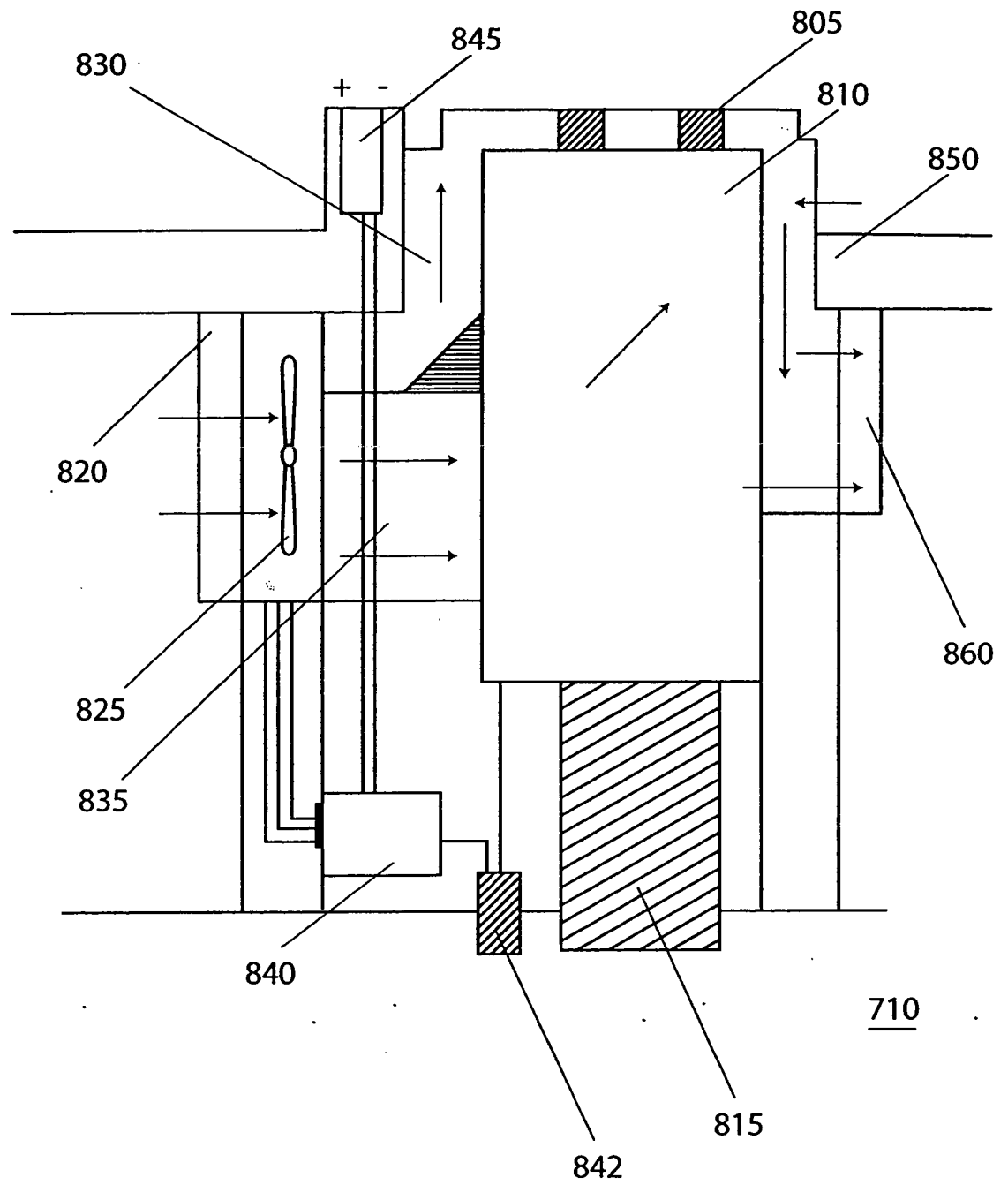


FIG. 8

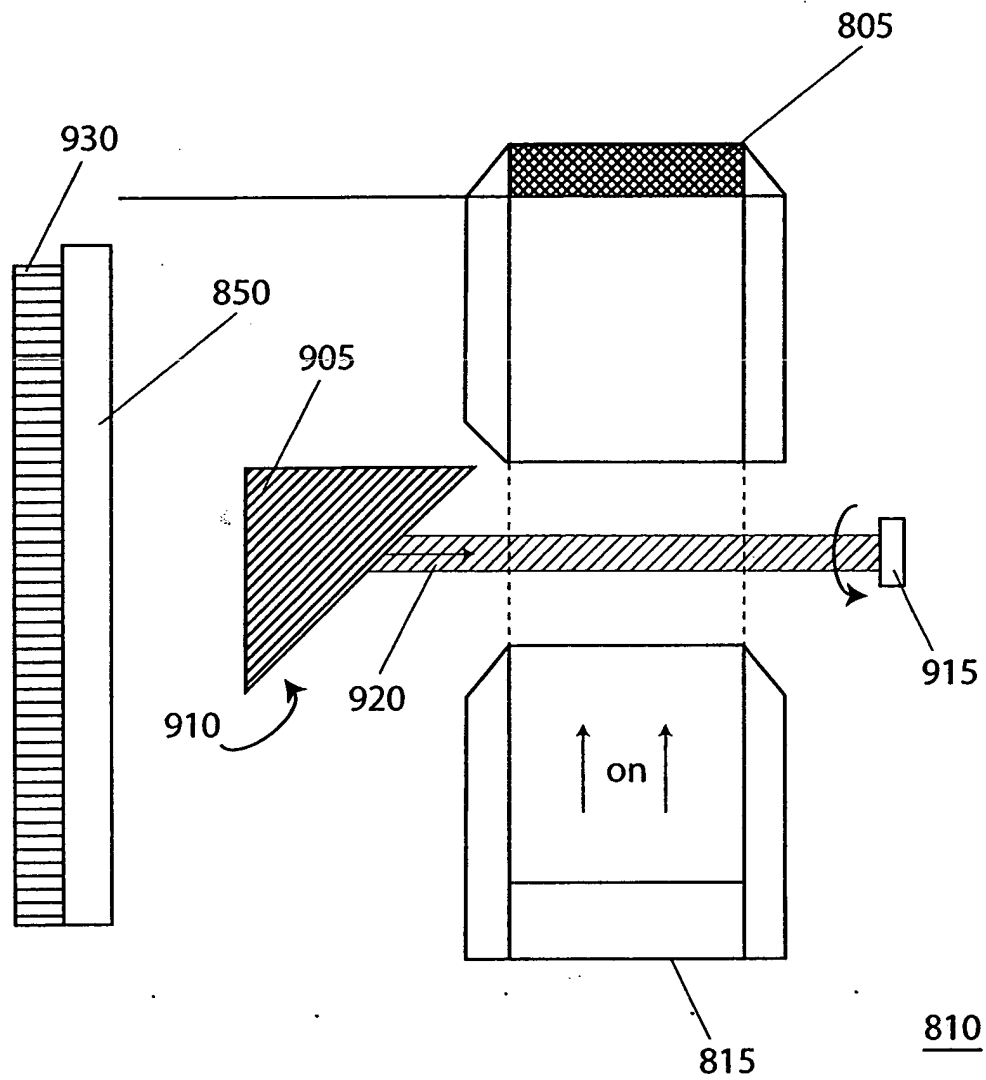


FIG. 9

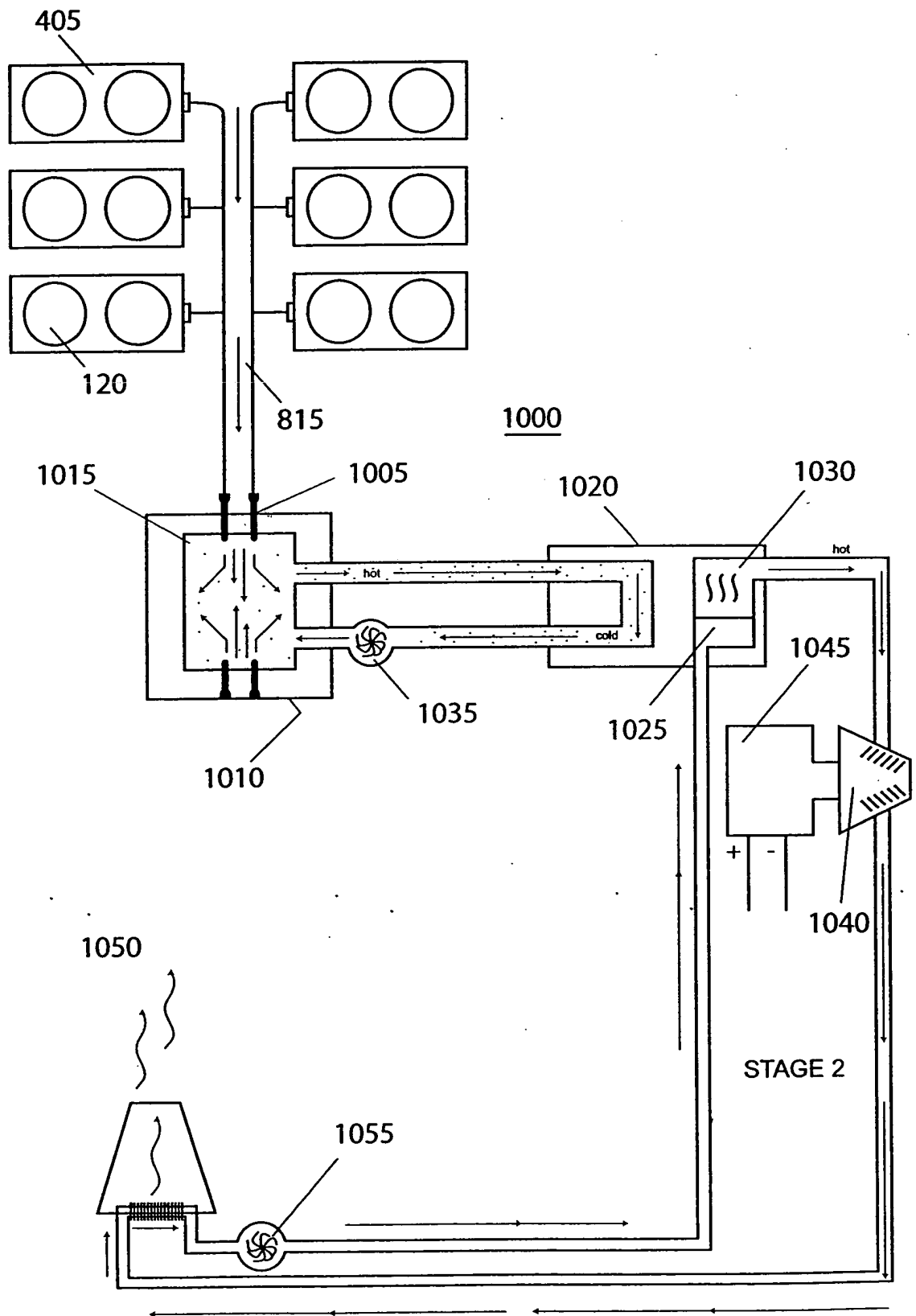


FIG. 10

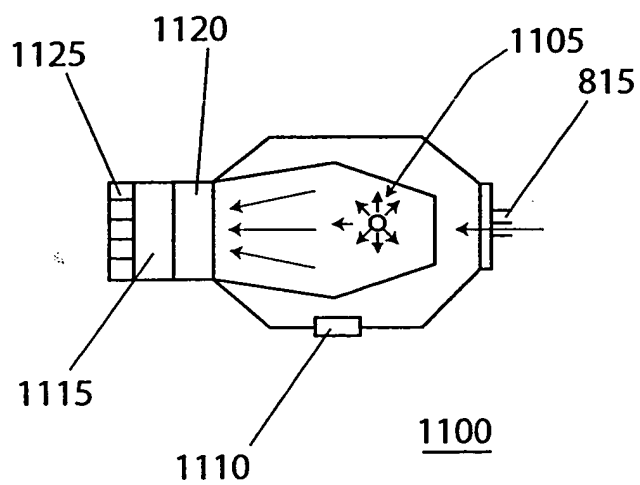


FIG. 11

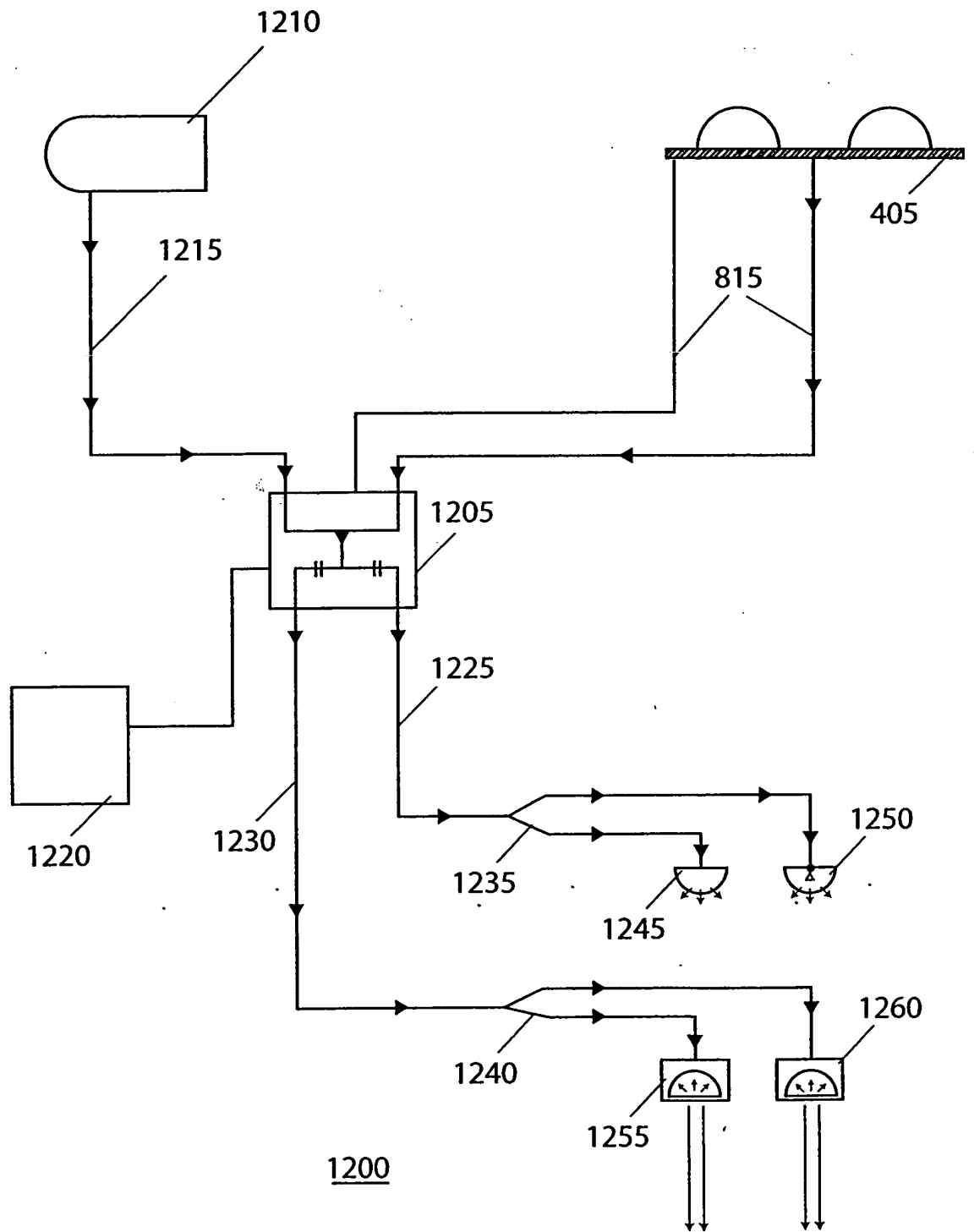


FIG. 12

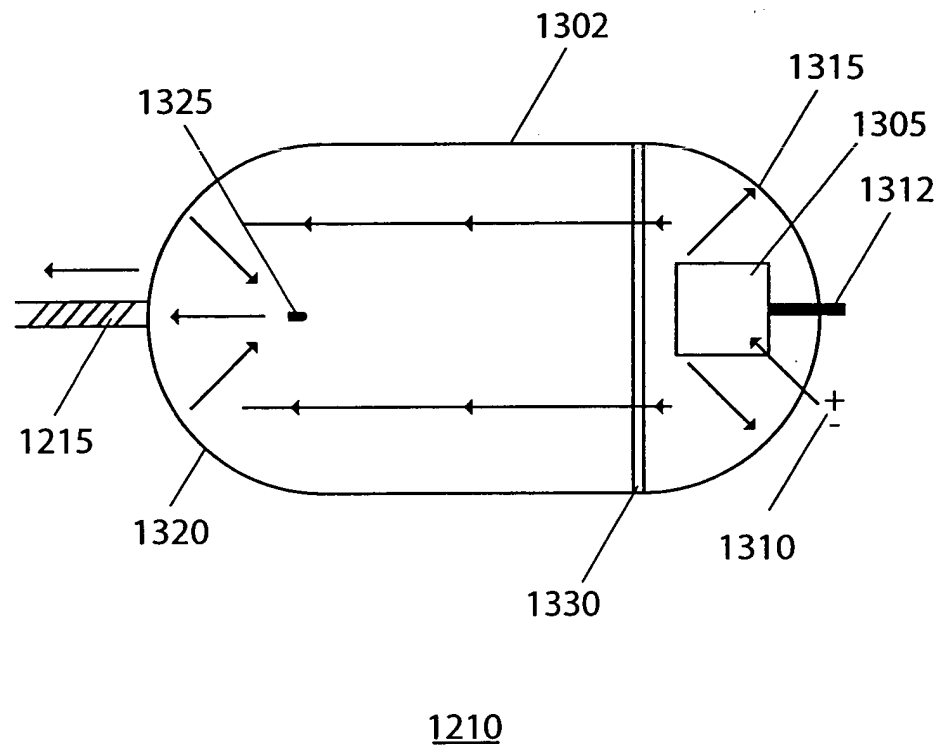


FIG. 13

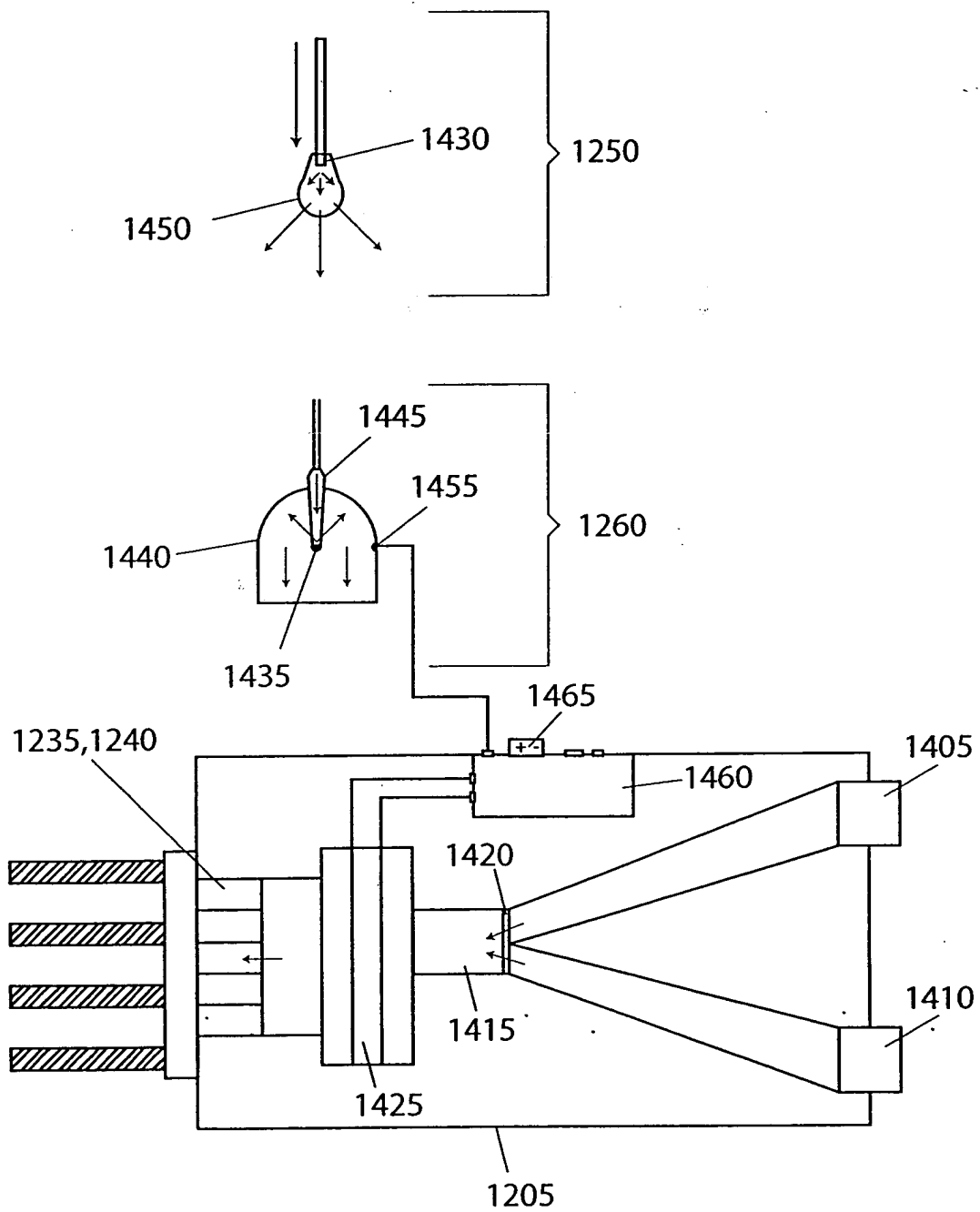


FIG. 14

1505

1510

Output to Various Devices

Input From Multiple Collectors (405)

Fiber Input Combiner

Beam Control Unit

Microprocessor Control

1515

1500

1525

Multiple Fibers

Single Fibers
(Combined Signal)

1505

FIG. 15B

FIG. 16

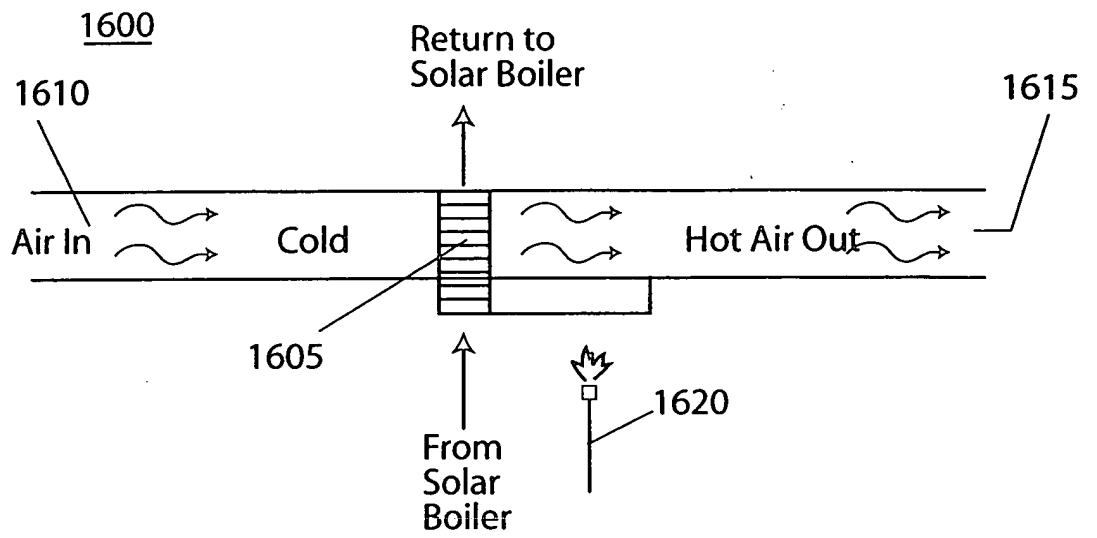


FIG. 16

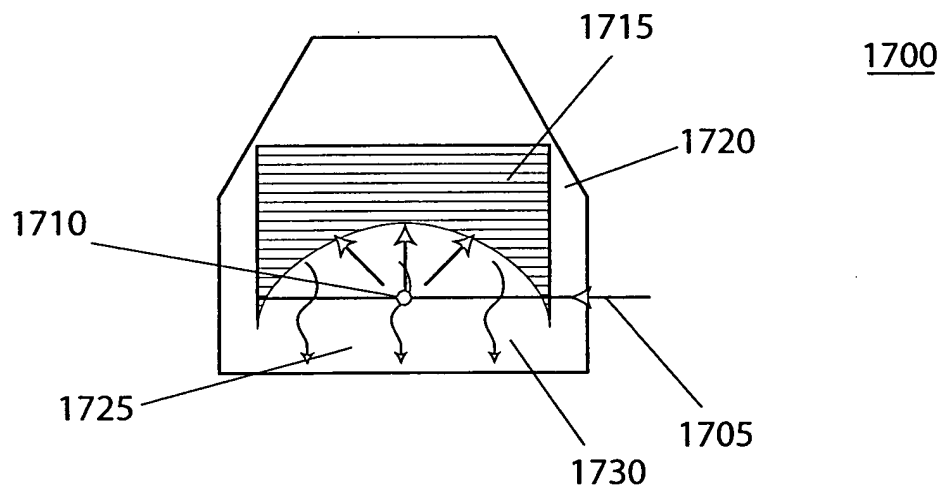


FIG. 17

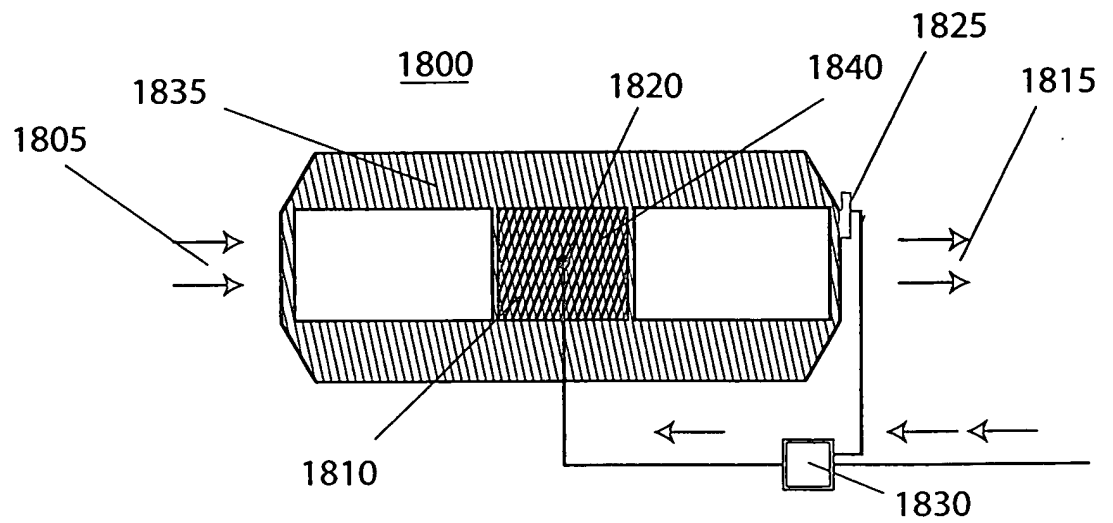


FIG. 18

A diagram of a circular structure, possibly a cross-section of a lens or a similar optical component. The structure is a large circle with a small, solid black dot at its center. On the left side of the circle, there is a trapezoidal protrusion. The top horizontal edge of this protrusion is labeled 1905. The right vertical edge of the protrusion is labeled 1915. The entire circular structure is labeled 1910.

FIG. 20A

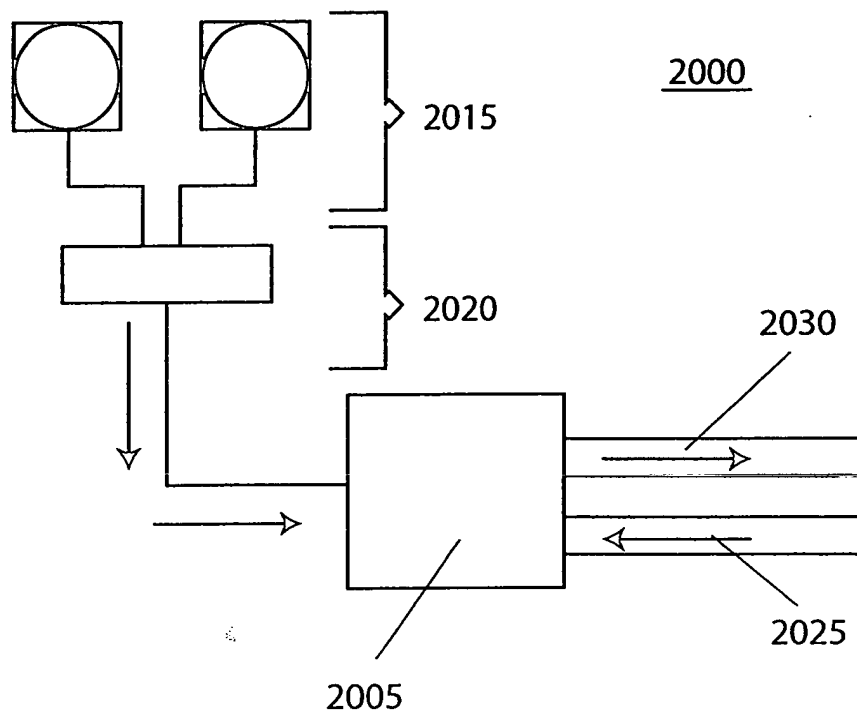


FIG. 20A

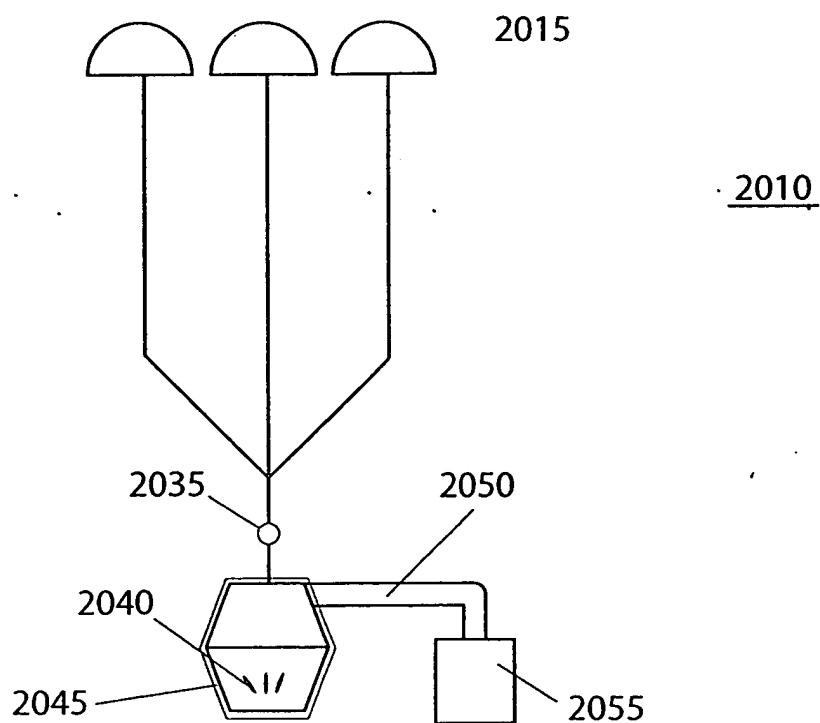


FIG. 20B

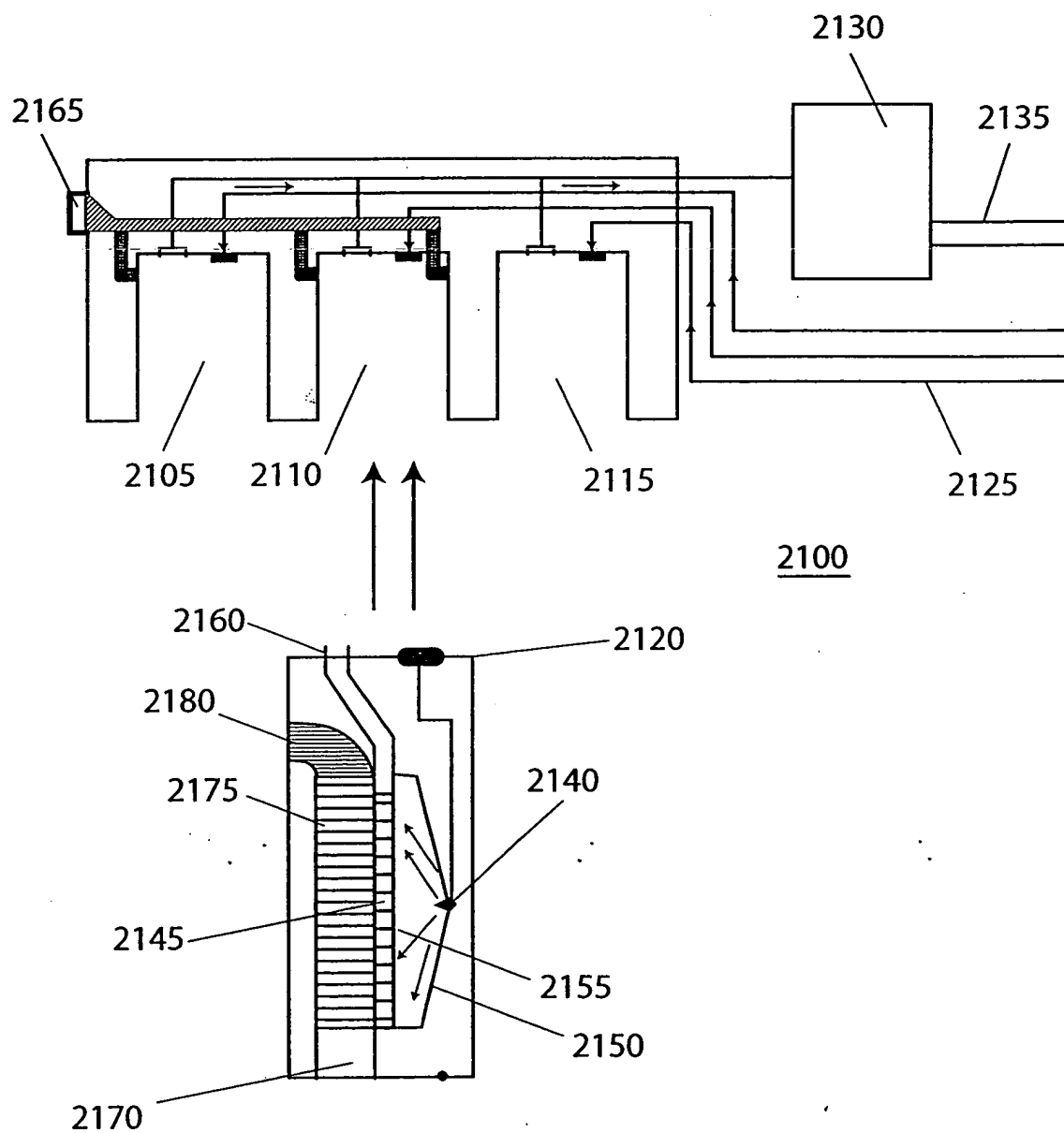


FIG. 21

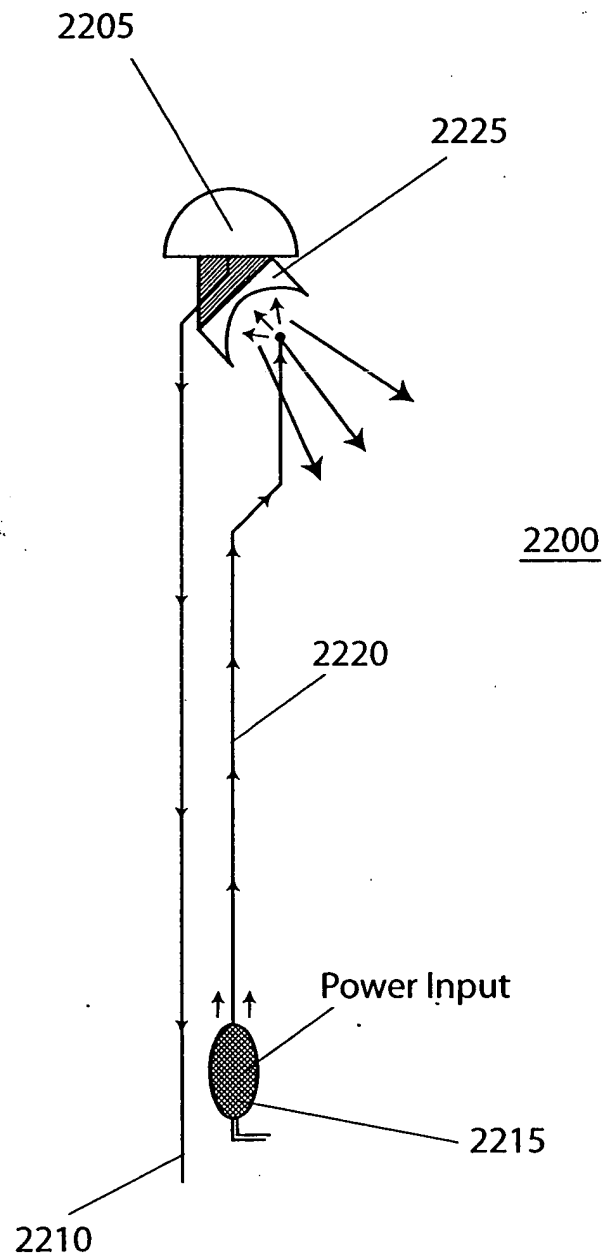


FIG. 22

FIG. 23

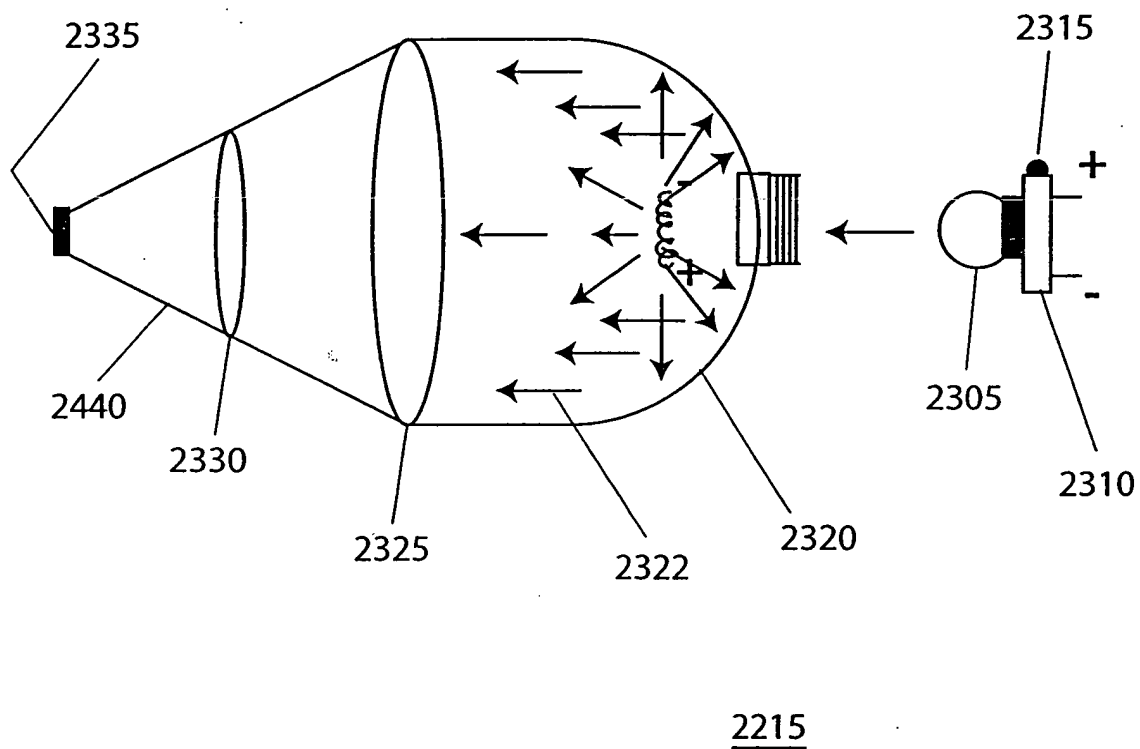


FIG. 23

FIG. 24

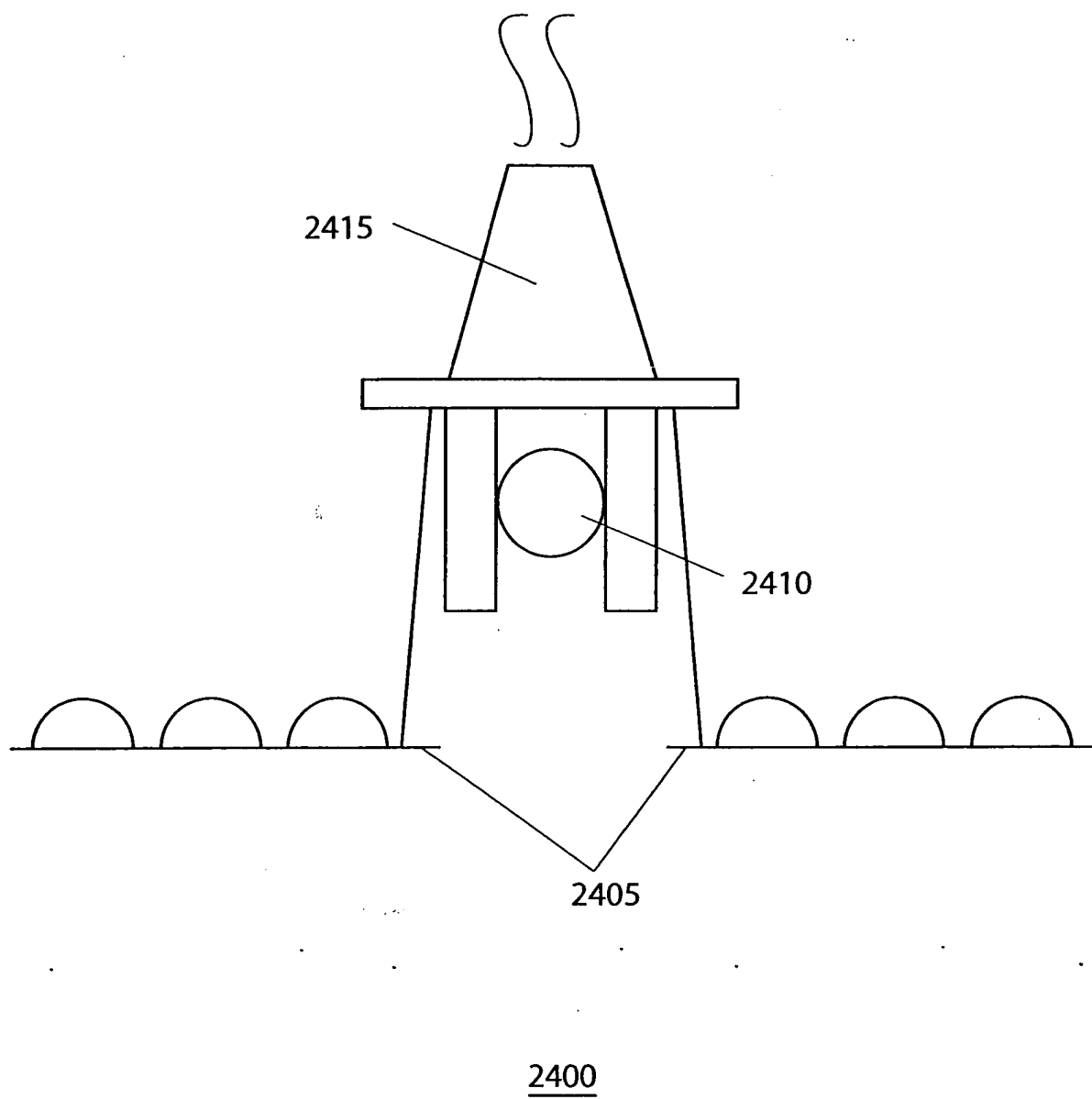


FIG. 24

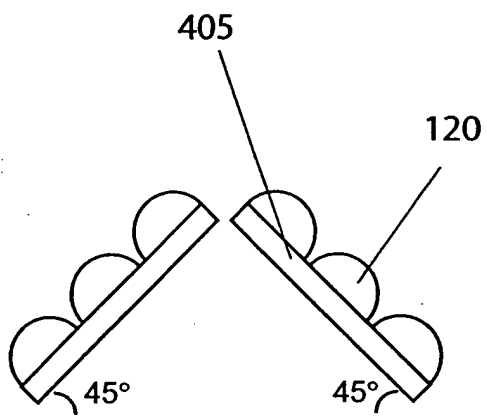


FIG. 25

A schematic diagram of an optical system. On the left, three parallel cylindrical lenses, labeled 2610, are shown with diagonal hatching. Arrows from each lens point to a large, vertically oriented elliptical lens labeled 2605. This lens 2605 is part of a bracketed assembly. To its right is another vertically oriented elliptical lens. Arrows from both lenses point towards a central point where multiple rays converge. From this point, several arrows diverge and point towards a circular component labeled 2620 on the right. A label 2615 points to the converging rays.

FIG. 26



$n_1 = 1.493025$
 $n_2 = 1.493025$
 $R = 1.493025$
 $B = 1.493025$
 Index of refraction: Media 01 [Air (STP)]
 Index of refraction: Media 02 [Acrylic]
 Radius of surface one = thickness of lens
 Radius of surface two = infinity
 Light Source angle w.r.t. horizon

FIG. 28A

Angles of Incidence and Refraction with Light Sources at Infinity

Angle of incidence	Surface 01		Surface 02	
	Angle of incidence	Angle of refraction	Angle of incidence	Angle of refraction
0	0	0	0	0
1	0.709407641	0.709407641	0.290592359	0.409518171
2	1.418707911	0.581292089	0.581292089	0.819298099
3	2.127793324	0.872204676	1.225017446	1.225017446
4	2.836516162	1.163440388	1.640914877	1.640914877
5	3.544888363	1.453111637	2.051330314	2.051330314
6	4.252881398	1.747718802	2.463382005	2.463382005
7	4.959826161	2.040178839	2.876411555	2.876411555
8	5.666212848	2.333787152	3.290589924	3.290589924
9	6.371708839	2.628589161	3.706097431	3.706097431
10	7.076268382	2.923731418	4.12303526	4.12303526
11	7.779713468	3.220286532	4.541652635	4.541652635
12	8.481951716	3.518048284	4.962095152	4.962095152
13	9.182888247	3.817131753	5.38453846	5.38453846
14	9.882346561	4.117633439	5.809160796	5.809160796
15	10.58070861	4.419731386	6.236143235	6.236143235
16	11.27831469	4.723485311	6.665669932	6.665669932
17	11.97506327	5.029036728	7.097893716	7.097893716
18	12.66949092	5.336593079	7.533109649	7.533109649
19	13.35972113	5.646077866	7.971408996	7.971408996
20	14.04277922	5.957720782	8.4130246	8.4130246
21	14.72828216	6.271717843	8.858160867	8.858160867
22	15.41484847	6.588151527	9.307035725	9.307035725
23	16.10264009	6.907156908	9.758232422	9.758232422
24	16.79171282	7.228871799	10.21679955	10.21679955
25	17.482456311	7.553436885	10.67815138	10.67815138
26	18.17500413	7.880993871	11.14411817	11.14411817
27	18.86930438	8.211695621	11.61493638	11.61493638
28	19.5643137	8.5459863	12.0884999	12.0884999
29	20.26118768	8.883121525	12.5710891	12.5710891
30	20.9598415	9.224138499	13.05897137	13.05897137
31	21.6603183	9.568958163	13.55170338	13.55170338
32	22.36231465	9.91785348	14.05057922	14.05057922
33	23.0659118	10.27050889	14.55582043	14.55582043
34	23.77239818	10.62760182	15.06790332	15.06790332
35	24.48108354	10.98914146	15.58695043	15.58695043
36	25.191649043	11.35530957	16.11333662	16.11333662
37	25.904737047	11.72629253	16.6476971	16.6476971
38	26.62071861	12.10228139	17.18940308	17.18940308

Corresponding Geometric/Trigonometric Spherical Collector Variables

H	X	Y	h	Z
	Ray transmission dist.	$y = H - h$	Incident ray height Surface 02	Focal Length
0	0	0	0	0
1	0.104714439	0.050426387	0.074288052	10.39944941
2	0.209349698	0.069837771	0.14855921	10.38717785
3	0.314015737	0.091219141	0.222796596	10.36950635
4	0.418838842	0.121555476	0.296983367	10.34712170
5	0.522924456	0.151831731	0.371102726	10.32095417
6	0.62717078	0.18202835	0.445137945	10.29178922
7	0.73121606	0.212163884	0.519072377	10.25991197
8	0.835038606	0.24214913	0.592889476	10.22559495
9	0.93860679	0.272033979	0.666572812	10.18906207
10	1.041889566	0.301782977	0.740106089	10.15049003
11	1.144833972	0.331380809	0.813473164	10.12315144
12	1.247470145	0.360812083	0.886638902	10.18187807
13	1.349706336	0.390061228	0.959644998	10.14783144
14	1.451531374	0.419112982	1.032418392	10.11194153
15	1.552914271	0.447954938	1.104962891	10.07463386
16	1.653824135	0.476560748	1.177630346	10.03597763
17	1.754320228	0.504925192	1.249505046	9.995914521
18	1.854101966	0.533028882	1.321073285	9.954463291
19	1.953408927	0.560855043	1.392353882	9.91181745
20	2.052207697	0.588387951	1.463373299	9.86811743
21	2.150507697	0.615610898	1.53419598	9.823497848
22	2.248386771	0.642507199	1.603132262	9.77813430
23	2.34586771	0.669039566	1.6715326805	9.732093726
24	2.443019858	0.695232095	1.741677664	9.685367651
25	2.53979597	0.721066246	1.814643324	9.637932354
26	2.636202881	0.746576478	1.88742053	9.589834548
27	2.732394298	0.771889714	1.959545024	9.541388583
28	2.82837277	0.796863537	2.030768849	9.492693148
29	2.92417721	0.82157012	2.0867071	9.44385351
30	3.019828449	0.8461612	2.156138388	9.39487759
31	3.115303504	0.86968145	2.223222005	9.345811729
32	3.21059585	0.89208377	2.289848351	9.296643797
33	3.30571421	0.913381434	2.356035927	9.247397307
34	3.40065818	0.933581434	2.421775987	9.19804582
35	3.49543154	0.952693546	2.487063072	9.14858132
36	3.59003159	0.970749152	2.551892262	9.09904582
37	3.684468852	0.987781306	2.616259917	9.04944582
38	3.778764322	1.003781306	2.680162731	8.99979347

FIG. 28B

39	26.51652792	12.4847208	17.7397783	3.77592346	4.66287569	1.03232348	2.74398778	8.57625936
40	27.12599451	12.87006549	18.2988394	3.85672438	4.59626659	1.05015885	2.80656703	8.48064199
41	27.7773244	13.26226756	18.8670097	3.93634174	4.53823748	1.06778641	2.86906772	8.39523127
42	28.33971056	13.66028944	19.4446287	4.01478638	4.43868953	1.08481639	2.93110199	8.32267776
43	28.9565242	14.06434758	20.03211626	4.09199016	4.38812221	1.0991773	2.99267287	8.20778153
44	29.5253624	14.47465376	20.6298918	4.16795023	4.31603802	1.11416756	3.05782667	8.1168131
45	30.10833477	14.89146523	21.23839217	4.24264087	4.24264087	1.12820702	3.11443798	8.03330873
46	30.68501525	15.31498475	21.85807206	4.31603802	4.16795023	1.14139385	3.17464627	7.93306453
47	31.25433928	15.74546062	22.48940525	4.38812221	4.09199016	1.15371066	3.23441164	7.81544168
48	31.81686329	16.18313671	23.13288383	4.45262748	4.01478638	1.16512123	3.29374774	7.69513335
49	32.37173152	16.62826248	23.78920946	4.52025748	3.93634174	1.17559716	3.352664765	7.563412249
50	32.91710703	17.08109297	24.45337482	4.59026659	3.85672438	1.18509077	3.411175912	7.49935635
51	33.45811177	17.54188873	25.14148516	4.66287569	3.77592346	1.1937942	3.467296326	7.392216597
52	33.98908421	18.01091579	25.83894998	4.728064522	3.69396852	1.201021345	3.524033774	7.283349291
53	34.51155446	18.48844554	26.55138696	4.79181306	3.610800139	1.207377257	3.584353774	7.18118357
54	35.0252454	18.9747546	27.27944409	4.854101966	3.526711514	1.212606259	3.641495703	7.084423801
55	35.5298753	19.4701247	28.023802	4.914912666	3.44145818	1.21666308	3.698246957	6.984123801
56	36.02515758	19.97484242	28.78317664	4.974225455	3.355157421	1.219509348	3.754716088	6.883997153
57	36.51080101	20.48919899	29.56437228	5.03202408	3.26783421	1.221091051	3.81097256	6.781313257
58	36.98650999	21.01346001	30.3620495	5.08288577	3.17951585	1.22160668	3.866972908	6.681585349
59	37.45198491	21.54801509	31.17915632	5.14000804	3.090228449	1.22036853	3.922373951	6.58231281
60	37.90692247	22.09307753	32.01657818	5.196152423	2.98857721	1.217751475	3.978400948	6.48057564
61	38.35101617	22.6488383	32.87524766	5.247718243	2.89829377	1.213759416	4.033958827	6.38146103
62	38.78395671	23.1604329	33.75917321	5.297085537	2.816782977	1.2082835	4.089457207	6.281879531
63	39.20343259	23.79436741	34.66043166	5.346039145	2.73942998	1.20109307	4.14645638	6.19402719
64	39.61513065	24.39488955	35.58917644	5.392764778	2.63020881	1.192286413	4.200477865	6.10970764
65	40.01273673	24.96726327	36.54364741	5.437846722	2.53709537	1.181734611	4.256112111	6.02651092
66	40.39793637	25.6020563	37.52518246	5.481277746	2.440419858	1.169361359	4.311911387	5.945147546
67	40.77041554	26.2293846	38.5323143	5.520209121	2.344386771	1.155085297	4.367943824	5.864337497
68	41.12986146	26.87013854	39.57537291	5.563103127	2.24763956	1.13820089	4.42423039	5.783722237
69	41.47596348	27.52403652	40.64733468	5.601483259	2.150207697	1.120474023	4.481088336	5.71591654
70	41.80841397	28.19198603	41.75301862	5.638155725	2.05212086	1.099949583	4.538268142	5.645777649
71	42.12690931	28.87909069	42.8945316	5.673111454	1.953408927	1.077142687	4.595988487	5.572789211
72	42.43115085	29.56884913	44.07423388	5.706339098	1.854101966	1.051943363	4.654395533	5.50970764
73	42.72084602	30.27915398	45.29473747	5.737828336	1.754230228	1.02433376	4.71339516	5.441071517
74	31.00420066	46.55906763	46.55906763	1.653824135	1.653824135	0.993886563	4.77383813	5.373691452
75	43.254636	47.87064206	47.87064206	1.552914271	1.552914271	0.96716733	4.834787225	5.30707746
76	43.4998092	49.2342443	49.2342443	1.451531374	1.451531374	0.924733137	4.897041221	5.256954827
77	43.72835392	50.63205155	50.63205155	1.34976326	1.34976326	0.885627771	4.96052617	5.203174523
78	43.94144685	53.13201871	53.13201871	1.247470145	1.247470145	0.8428337	5.025600235	5.150718152
79	44.13819671	55.67993501	55.67993501	1.144853972	1.144853972	0.797527069	5.09226038	5.103555154
80	44.31861435	58.30388401	58.30388401	1.041889066	1.041889066	0.748160093	5.160286425	5.0729115
81	44.48249556	60.97139464	60.97139464	0.93860679	0.93860679	0.694976354	5.23115369	5.03934898
82	44.63963209	63.67178782	63.67178782	0.83508606	0.83508606	0.637747022	5.30857769	5.00722025
83	44.75991262	66.4150154	66.4150154	0.73121606	0.73121606	0.57629164	5.37903746	4.97648227
84	44.87112367	69.2408738	69.2408738	0.62717078	0.62717078	0.510176546	5.456954827	4.94272821
85	44.96915043	72.1687033	72.1687033	0.52294456	0.52294456	0.439274133	5.537894056	4.903719225
86	45.04787751	75.10430452	75.10430452	0.41833842	0.41833842	0.363216887	5.622167614	4.85671621
87	45.1072096	78.12344896	78.12344896	0.314015737	0.314015737	0.281659112	5.710118097	4.804641355
88	45.15307198	81.2544886	81.2544886	0.20939698	0.20939698	0.19422344	5.802122419	4.752949519
89	45.17941097	84.46934962	84.46934962	0.104714439	0.104714439	0.10488794	5.876595677	4.699009526
90	45.18819423	87.74230577	87.74230577	3.67545E-16	3.67545E-16	3.65138E-16		0.69003941

FIG. 28C

Angles of Incidence and Refraction with Light Source at Infinity

Angle of incidence	Surface 01 (Included angle with respect to the horizon)		Surface 02 (Included angle with respect to the horizon)	
	1	2	3	4
-48	-41.12080146	-41.12080146	48.87013854	#N/D
-47	-40.77041354	-40.77041354	48.22938446	#N/D
-46	-40.39799507	-40.39799507	47.80200363	#N/D
-45	-40.01727373	-40.01727373	46.98726327	#N/D
-44	-39.61131065	-39.61131065	46.38486935	#N/D
-43	-39.20434259	-39.20434259	45.79456741	#N/D
-42	-38.78905671	-38.78905671	45.21604329	#N/D
-41	-38.35310167	-38.35310167	44.64883383	#N/D
-40	-37.90692247	-37.90692247	44.09377553	82.14054576
-39	-37.45198491	-37.45198491	43.54801509	78.76331707
-38	-36.98650999	-36.98650999	43.01349001	76.20497842
-37	-36.51080101	-36.51080101	42.48919899	74.06680151
-36	-36.02315758	-36.02315758	41.97484242	72.19038304
-35	-35.5298753	-35.5298753	41.4701247	70.51701571
-34	-35.0252454	-35.0252454	40.9747546	68.98279904
-33	-34.51153446	-34.51153446	40.48844554	67.50309997
-32	-33.98908421	-33.98908421	40.01091579	66.23984632
-31	-33.45811127	-33.45811127	39.54188873	64.99534861
-30	-32.91890703	-32.91890703	39.08109297	63.81906493
-29	-32.37173752	-32.37173752	38.62826248	62.70210129
-28	-31.8168329	-31.8168329	38.18313671	61.63735721
-27	-31.25453938	-31.25453938	37.74460652	60.61904947
-26	-30.68501525	-30.68501525	37.31498475	59.64238737
-25	-30.10853477	-30.10853477	36.89146523	58.70344442
-24	-29.52336524	-29.52336524	36.47466376	57.79849363
-23	-28.9345342	-28.9345342	36.06434758	56.92488599
-22	-28.33971056	-28.33971056	35.66028944	56.07995901
-21	-27.73737244	-27.73737244	35.26124682	55.26146682
-20	-27.12953451	-27.12953451	34.86742573	54.46742573
-19	-26.51652792	-26.51652792	34.48347208	53.69607149
-18	-25.89771861	-25.89771861	34.10228139	52.94382566
-17	-25.27377047	-25.27377047	33.72629253	52.21526514
-16	-24.64466903	-24.64466903	33.35330957	51.5011057
-15	-24.01083804	-24.01083804	32.98914146	50.80817757
-14	-23.37239818	-23.37239818	32.62760182	50.12841317
-13	-22.72849111	-22.72849111	32.27050889	49.4638337
-12	-22.08231465	-22.08231465	31.91768353	48.8163384
-11	-21.43104183	-21.43104183	31.56895817	48.18049146
-10	-20.7758415	-20.7758415	31.2241585	47.55753422
				46.94053852

Corresponding Geometric/Trigonometric Spherical Collector Variables

X	M	W	L	Y	T	S	Delta Q
0	6	180	1.117558E-16	8.41762E-16	-6	#N/D	#N/D
0.10471439	5.99986171	179	0.157194083	0.117238501	-5.88184767	#N/D	-5.88184767
0.20939698	5.998344962	178	0.31055094	0.229335142	-5.76700942	#N/D	-5.76700942
0.31401577	5.991777209	177	0.460325016	0.336390008	-5.65186601	#N/D	-5.65186601
0.418538842	5.98384302	176	0.60672444	0.439767638	-5.546107563	#N/D	-5.546107563
0.523934456	5.977168189	175	0.750013841	0.535145328	-5.439522489	#N/D	-5.439522489
0.62711078	5.967131572	174	0.890316832	0.631918408	-5.335212964	#N/D	-5.335212964
0.73121606	5.95527691	173	1.027818185	0.722311078	-5.232953832	74.83912566	74.83912566
0.83508606	5.941686412	172	1.162657156	0.809013094	-5.132595318	51.90479777	51.90479777
0.93860679	5.926130044	171	1.294992188	0.892200684	-5.03392936	41.91235506	41.91235506
1.041889066	5.908463518	170	1.42491462	0.97203596	-4.93829232	34.9832932	34.9832932
1.14483972	5.889763101	169	1.552434029	1.04868417	-4.84104684	31.86956688	31.86956688
1.247470145	5.86885604	168	1.677973428	1.12223743	-4.74649881	28.86604956	28.86604956
1.349700326	5.846220389	167	1.801286937	1.192585232	-4.653355157	24.57660661	24.57660661
1.451531374	5.821774338	166	1.922561735	1.26074541	-4.561099817	21.069819	21.069819
1.552914271	5.79534938	165	2.041862756	1.32572572	-4.469782386	22.97009168	22.97009168
1.653824135	5.767570176	164	2.159259204	1.388240733	-4.379309940	21.59843794	21.59843794
1.754202228	5.737828356	163	2.274796032	1.448231122	-4.289397414	20.40884094	20.40884094
1.854101966	5.706339098	162	2.388252365	1.505772149	-4.200566949	19.35688594	19.35688594
1.953408927	5.673111454	161	2.50048302	1.560964092	-4.112147361	18.42073926	18.42073926
2.05120086	5.638155725	160	2.610711684	1.613882113	-4.024727612	17.57767346	17.57767346
2.150207697	5.601482559	159	2.719241382	1.664396213	-3.938889346	16.81189317	16.81189317
2.24763056	5.563103127	158	2.826099913	1.713171566	-3.849931471	16.11112275	16.11112275
2.344386771	5.52009121	157	2.931311236	1.759669353	-3.763397688	15.46503889	15.46503889
2.440198858	5.48272746	156	3.034805818	1.804146209	-3.677126337	14.86771761	14.86771761
2.53570957	5.447846722	155	3.136870949	1.846655444	-3.591191278	14.31097317	14.31097317
2.630228881	5.392764278	154	3.237251033	1.887246883	-3.503317393	13.79022555	13.79022555
2.723945998	5.346039145	153	3.336047849	1.925967235	-3.42007191	13.30115625	13.30115625
2.816829377	5.29783557	152	3.43270797	1.96280318	-3.334832329	12.84014592	12.84014592
2.908857721	5.24718243	151	3.527097116	1.99798703	-3.24875904	12.4013608	12.4013608
3	5.196152423	150	3.620222086	2.031326914	-3.164825508	11.9902287	11.9902287
3.09228649	5.14003804	149	3.705359215	2.062975621	-3.080028183	11.59707449	11.59707449
3.179515385	5.088288577	148	3.806340412	2.092947814	-2.995340763	11.22186615	11.22186615
3.26783421	5.032023408	147	3.895966137	2.121275964	-2.910747443	10.85322853	10.85322853
3.355157421	4.974252435	146	3.983983552	2.14799078	-2.826234656	10.51970832	10.51970832
3.44148618	4.91491266	145	4.070146631	2.1712137	-2.741790929	10.2002479	10.2002479
3.526711514	4.854101966	144	4.14808638	2.194695212	-2.657460755	9.87062432	9.87062432
3.610860139	4.79181306	143	4.22807674	2.218738598	-2.573074462	9.567828551	9.567828551
3.693988352	4.728064522	142	4.319694984	2.235776418	-2.488788104	9.273444704	9.273444704

FIG. 28D

-29	-20.1187848	30.88312152	46.34644094	3.77922246	4.60287569	141	4.39733301	2.258370419	-2.4043435	8.989129229	3.4043435
-28	-19.4543137	30.5458603	45.75721779	3.85872638	4.59626659	140	4.478190132	2.27929274	-2.320337385	8.7141845	-2.320337385
-27	-18.7830438	30.21169602	45.1780481	3.96514174	4.578237481	139	4.5508137	2.29208863	-2.236108816	8.447983164	-2.236108816
-26	-18.11900413	29.88099587	44.6284993	4.01478208	4.558808953	138	4.63032092	2.306831367	-2.152037386	8.18970492	-2.152037386
-25	-17.46560311	29.5534589	44.0792882	4.07199016	4.54088221	137	4.70399863	2.320177518	-2.067944891	7.93934958	-2.067944891
-24	-16.7711282	29.2288718	43.6958919	4.167950223	4.524040887	136	4.776016178	2.33114598	-1.983893104	7.694372253	-1.983893104
-23	-16.09284059	28.90715691	42.9519469	4.262400887	4.506400887	135	4.84649262	2.34714986	-1.898885701	7.460219338	-1.898885701
-22	-15.41784847	28.58815153	42.41563674	4.316058802	4.487950223	134	4.91530266	2.359202025	-1.815927182	7.23031428	-1.815927182
-21	-14.7282216	28.2711784	41.88653372	4.3812221	4.469190016	133	4.982475402	2.35967077	-1.732025084	7.006377646	-1.732025084
-20	-14.0427922	27.95772078	41.36430421	4.458808953	4.451783638	132	5.048002204	2.35967077	-1.648179761	6.788387225	-1.648179761
-19	-13.35397213	27.6402787	40.84831323	4.528237481	4.528237481	131	5.11874521	2.37194983	-1.56404491	6.576096186	-1.56404491
-18	-12.66349092	27.33650908	40.33882295	4.59626659	4.60287569	130	5.17408347	2.376020318	-1.48070534	6.36884441	-1.48070534
-17	-11.97096377	27.0290673	39.83489127	4.66287569	4.66287569	129	5.234620177	2.376020318	-1.397091128	6.166593056	-1.397091128
-16	-11.27651469	26.72448531	39.33039063	4.728084522	4.728084522	128	5.294240177	2.376020318	-1.313571184	5.969122664	-1.313571184
-15	-10.58208861	26.41971139	38.8440799	4.79181306	4.79181306	127	5.350641647	2.380733842	-1.230156297	5.76229105	-1.230156297
-14	-9.882346561	26.1176344	38.3444785	4.854101966	4.854101966	126	5.406109039	2.379824056	-1.14686678	5.587737545	-1.14686678
-13	-9.18288247	25.81713175	37.87099326	4.91422455	4.91422455	125	5.45989315	2.377774703	-1.06389315	5.4043778	-1.06389315
-12	-8.481931716	25.51804828	37.39059792	4.97422455	4.97422455	124	5.51914773	2.377774703	-0.98044958	5.223202728	-0.98044958
-11	-7.779713468	25.22028653	36.91476643	5.03023408	5.03023408	123	5.56226718	2.37000703	-0.89776718	5.046888997	-0.89776718
-10	-7.076268582	24.9237142	36.4265728	5.08238877	5.08238877	122	5.610827482	2.36446704	-0.815048545	4.874259018	-0.815048545
-9	-6.37170839	24.62626916	35.93799717	5.14030804	5.14030804	121	5.657679455	2.357721079	-0.73250737	4.705341171	-0.73250737
-8	-5.66912848	24.33378715	35.45035358	5.190152423	5.190152423	120	5.704613805	2.349842602	-0.650157398	4.539885626	-0.650157398
-7	-4.96826161	24.04017384	34.96308815	5.24718243	5.24718243	119	5.754613805	2.340844978	-0.568012743	4.377804808	-0.568012743
-6	-4.26281398	23.7473186	34.47630313	5.297085557	5.297085557	118	5.804357438	2.330741512	-0.486087863	4.218982094	-0.486087863
-5	-3.544888563	23.4531164	34.12915381	5.346091445	5.346091445	117	5.854357438	2.319545462	-0.403304828	4.063304828	-0.403304828
-4	-2.83651612	23.16344384	33.6742391	5.392764278	5.392764278	116	5.904357438	2.307270059	-0.322594882	3.91066336	-0.322594882
-3	-2.127793124	22.8720668	33.22140281	5.43812746	5.43812746	115	5.954357438	2.295928526	-0.241781045	3.760950066	-0.241781045
-2	-1.418707911	22.58129209	32.77043319	5.481272746	5.481272746	114	5.9998381607	2.279534091	-0.160885768	3.614058332	-0.160885768
-1	-0.709407641	22.29059236	32.32112259	5.523029121	5.523029121	113	6.040357438	2.264100006	-0.080286763	3.469881699	-0.080286763
0	0	22	31.87326697	5.563103127	5.563103127	112	6.080357438	2.241000006	0	3.328312088	0
1	0.709407641	21.70940764	31.42666559	5.601482539	5.601482539	111	6.120357438	2.220166095	0.079958398	3.189239686	0.079958398
2	1.418707911	21.41870791	30.98112062	5.638153725	5.638153725	110	6.160357438	2.216930015	0.159572155	3.052550572	0.159572155
3	2.127793124	21.12779312	30.53645881	5.673111454	5.673111454	109	6.200357438	2.192233804	0.238824877	2.918125625	0.238824877
4	2.83651612	20.83651612	30.09242115	5.706339098	5.706339098	108	6.240357438	2.171802035	0.317700069	2.785839603	0.317700069
5	3.544888563	20.54488856	29.64888232	5.737828336	5.737828336	107	6.280357438	2.150411382	0.396181154	2.655553954	0.396181154
6	4.25381398	20.25381398	29.20563146	5.767570176	5.767570176	106	6.320357438	2.128075633	0.474251498	2.527124143	0.474251498
7	4.959826161	19.95982616	28.76247979	5.795354958	5.795354958	105	6.360357438	2.105533756	0.551894425	2.40038831	0.551894425
8	5.666212848	19.66621285	28.31924036	5.821774338	5.821774338	104	6.400357438	2.082624615	0.629092241	2.275158008	0.629092241
9	6.37170839	19.37170839	27.87572677	5.846220389	5.846220389	103	6.440357438	2.059561919	0.70583125	2.15123164	0.70583125
10	7.076268582	19.07626858	27.43717331	5.868885604	5.868885604	102	6.480357438	2.03712145	0.782691774	2.02667031	0.782691774
11	7.779713468	18.77971347	26.99713336	5.889763101	5.889763101	101	6.520357438	2.01461669	0.857838173	1.905281266	0.857838173
12	8.481931716	18.48193172	26.54168248	5.908763101	5.908763101	100	6.560357438	2.002712145	0.931113862	1.784634384	0.931113862
13	9.18288247	18.18288247	26.0921362	5.927330044	5.927330044	99	6.600357438	1.984648123	1.007842333	1.663008640	1.007842333
14	9.882346561	17.88234656	25.6475403	5.94168248	5.94168248	98	6.640357438	1.964087168	1.08027168	1.54877654	1.08027168
15	10.58208861	17.58208861	25.19847501	5.95327691	5.95327691	97	6.680357438	1.944087168	1.154652062	1.417566117	1.154652062
16	11.27651469	17.27651469	24.74782913	5.967131372	5.967131372	96	6.720357438	1.924087168	1.228700839	1.29122277	1.228700839
17	11.97096377	16.97096377	24.2941269	5.977168189	5.977168189	95	6.760357438	1.904087168	1.30157473	1.16372704	1.30157473
18	12.66349092	16.66349092	23.84102419	5.983840002	5.983840002	94	6.800357438	1.884087168	1.372006103	1.029059013	1.372006103
19	13.35397213	16.35397213	23.38450027	5.99177209	5.99177209	93	6.840357438	1.864087168	1.44231062	0.886300791	1.44231062
20	14.0427922	16.0427922	22.92561551	5.99644962	5.99644962	92	6.880357438	1.844087168	1.514818873	0.72913145	1.514818873
21	14.73282216	15.73282216	22.46418219	5.999081171	5.999081171	91	6.920357438	1.824087168	1.584748206	0.5441416	1.584748206
22	15.4184847	15.4184847	22.00000000	6.000000000	6.000000000	90	6.960357438	1.804087168	1.654010328	0.27878415	1.654010328

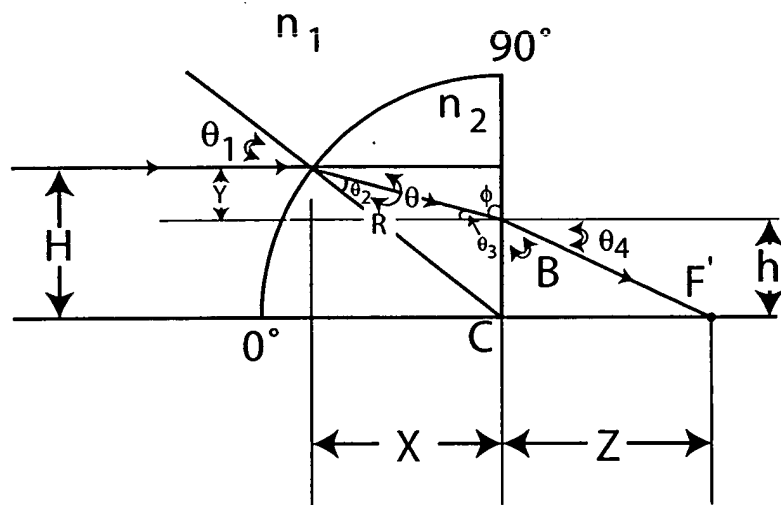


FIG. 29

FIG. 30

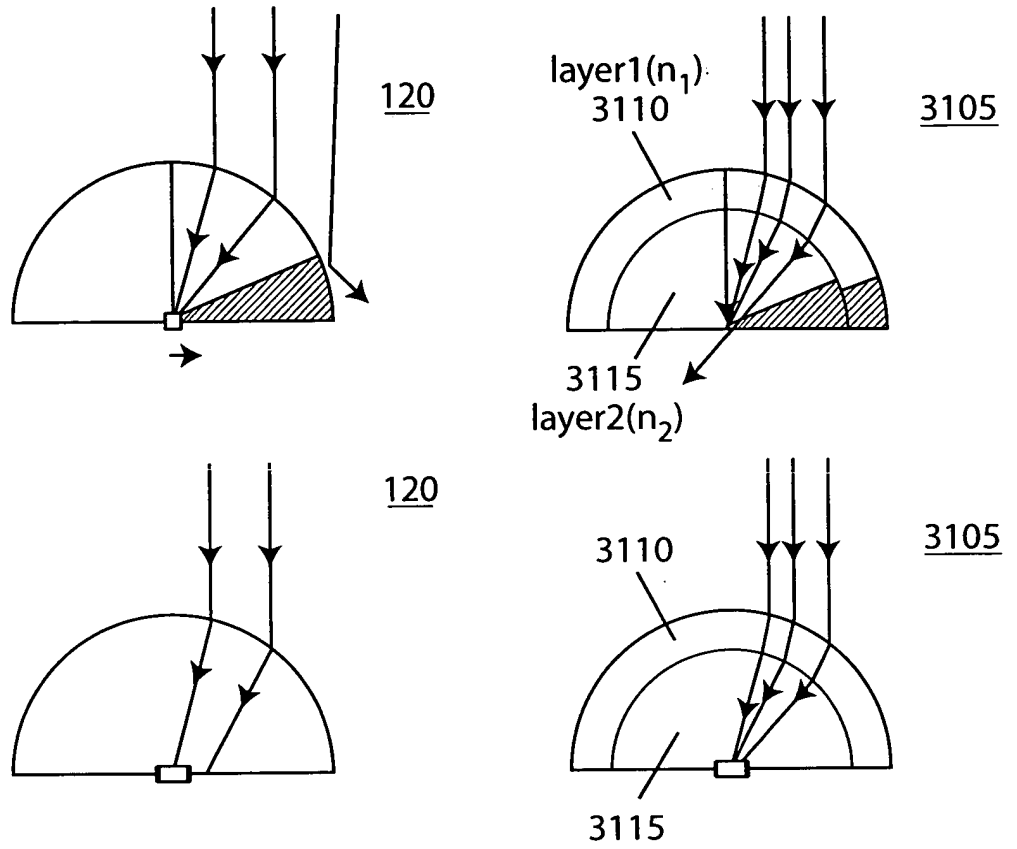


FIG. 31

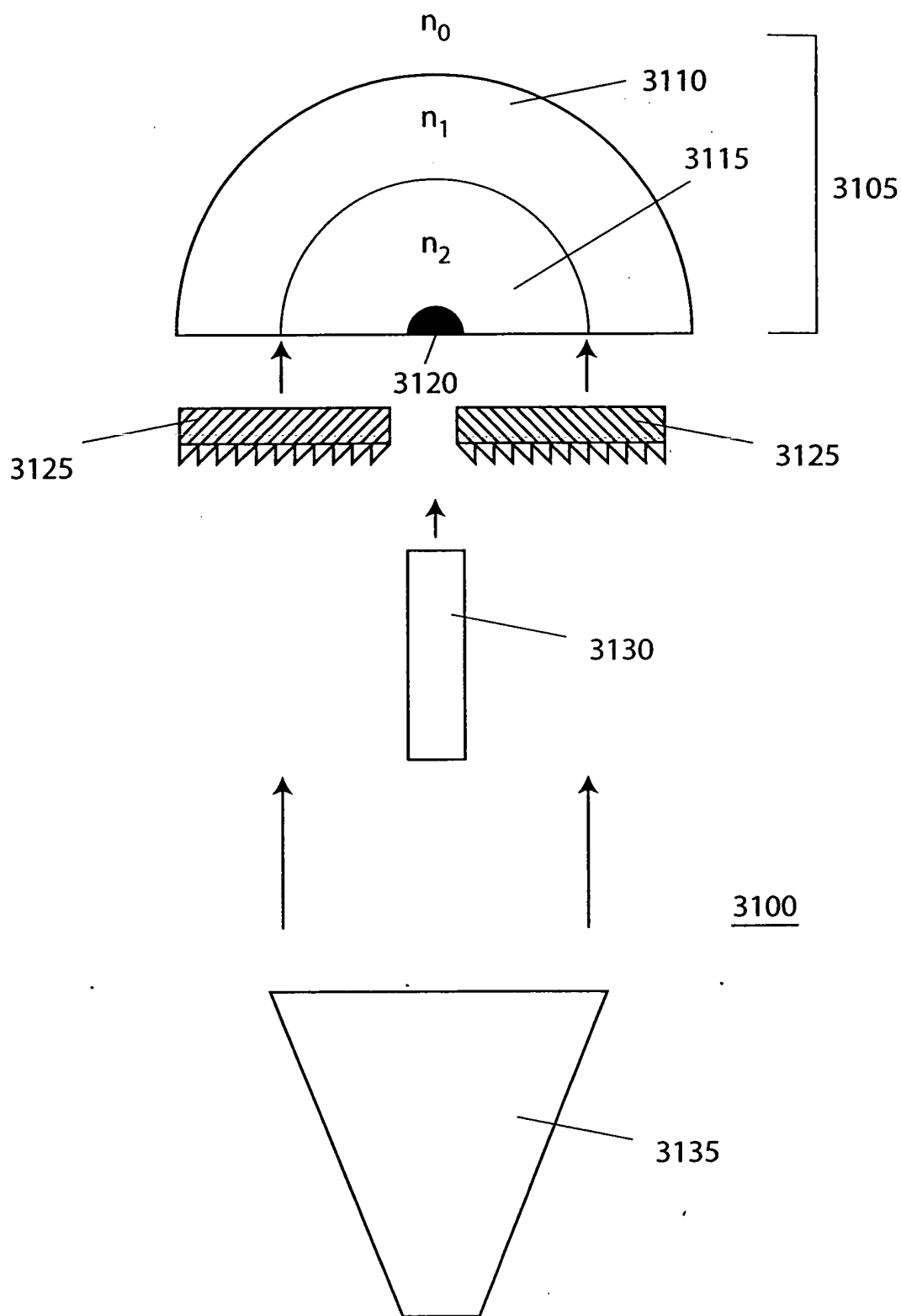


FIG. 32A

FIG. 32B

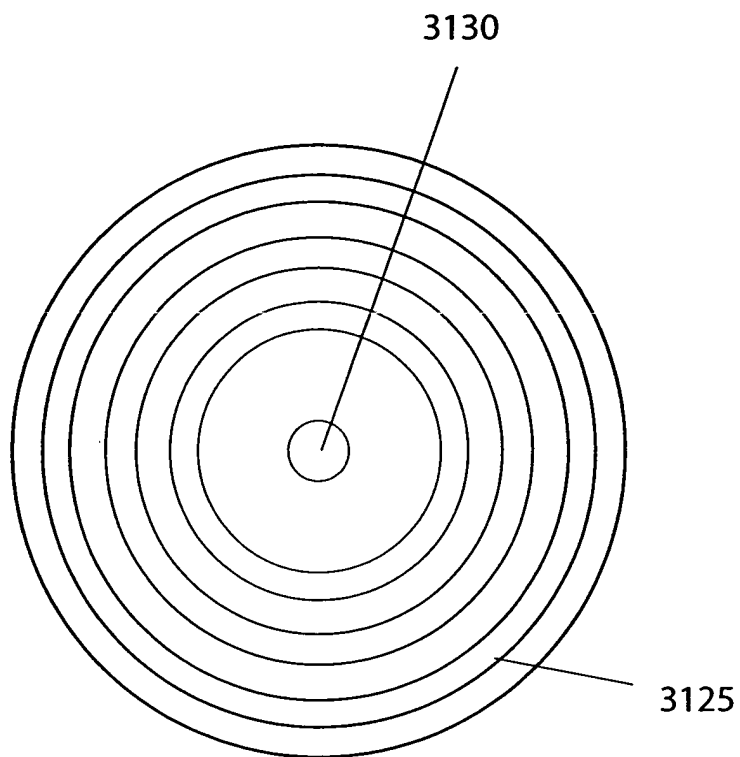


FIG. 32B

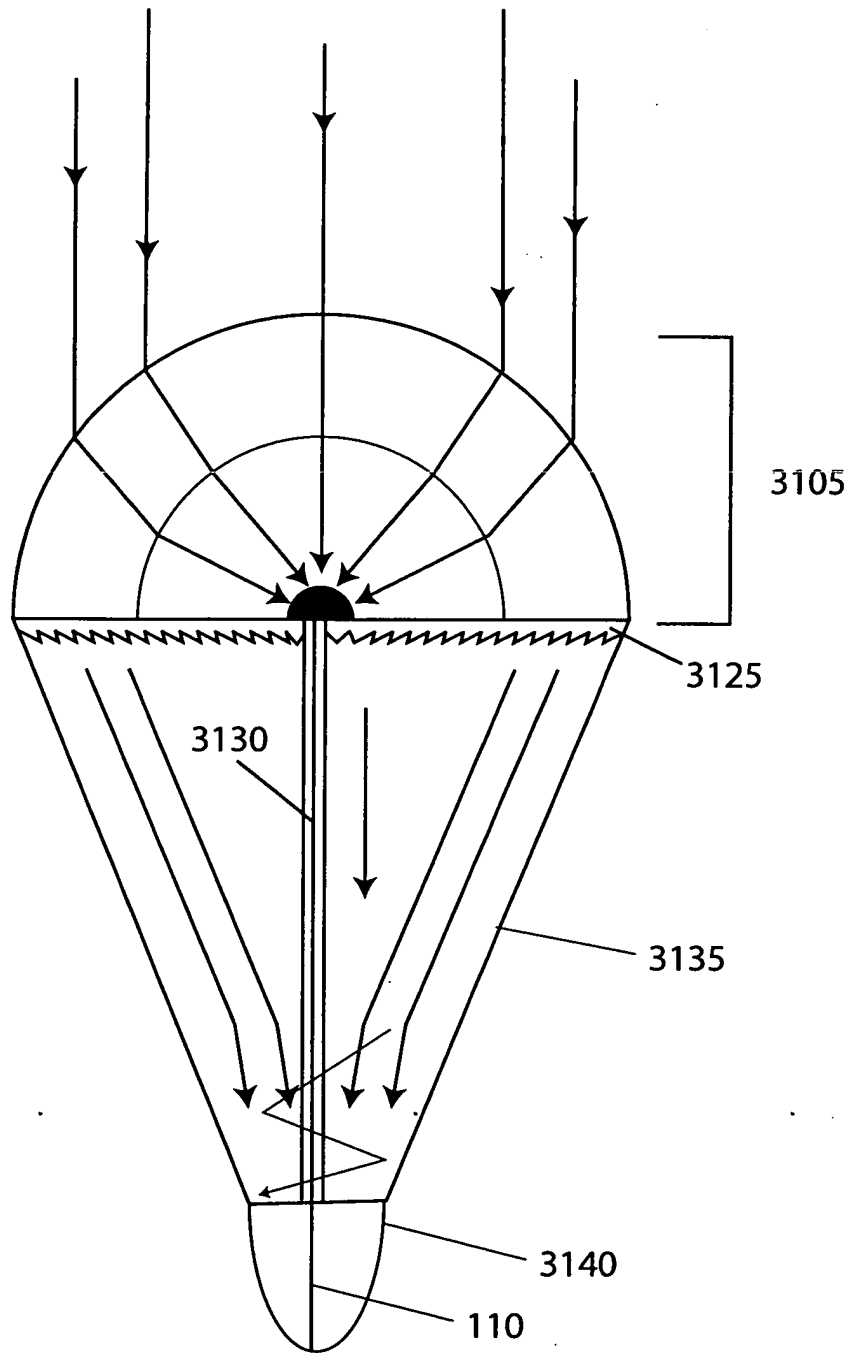


FIG. 32C

Diagram illustrating a light collector assembly 3105. The assembly consists of a rear collector 3135, which is a trapezoidal structure designed to capture ambient light. The rear collector is connected to a final stage 3120, which is a semi-circular structure. The final stage 3120 is designed to minimize the number of fibers used. The diagram shows a cross-section of the final stage 3120, with a central vertical line and two curved lines labeled 'a' and 'b' indicating the fiber arrangement.

FIG. 32D

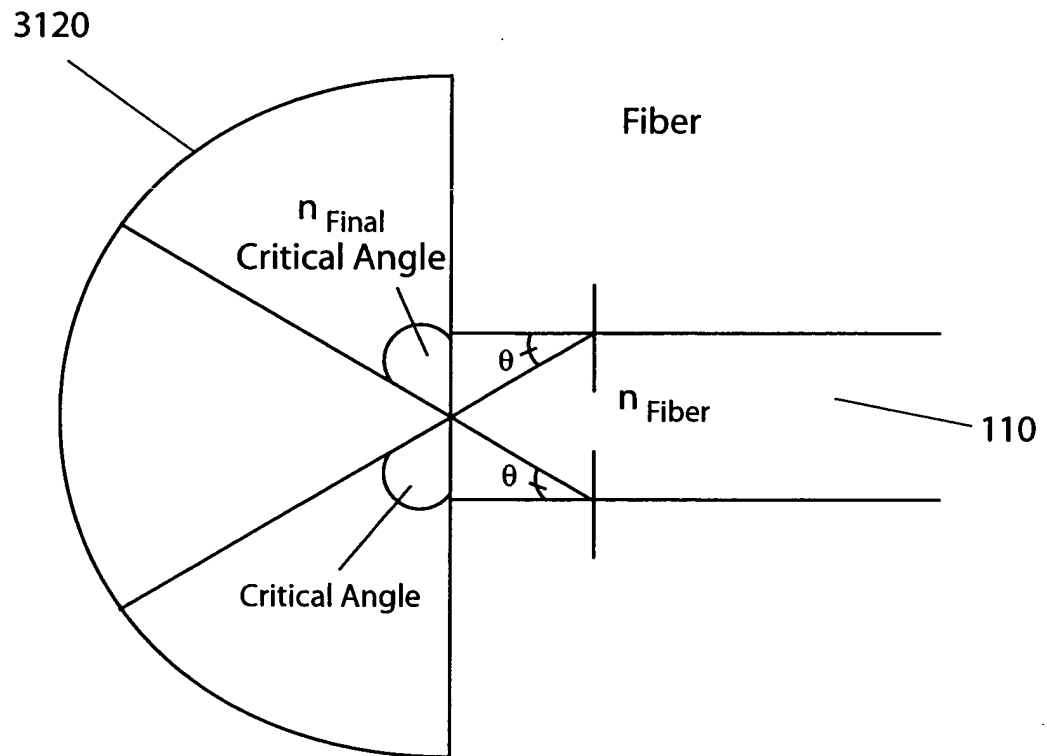


FIG. 33A

080403-080204

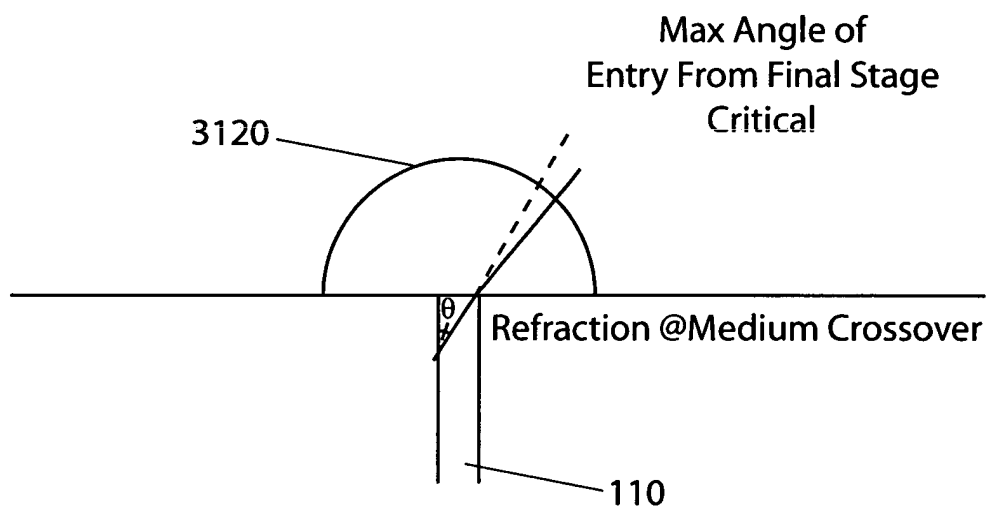
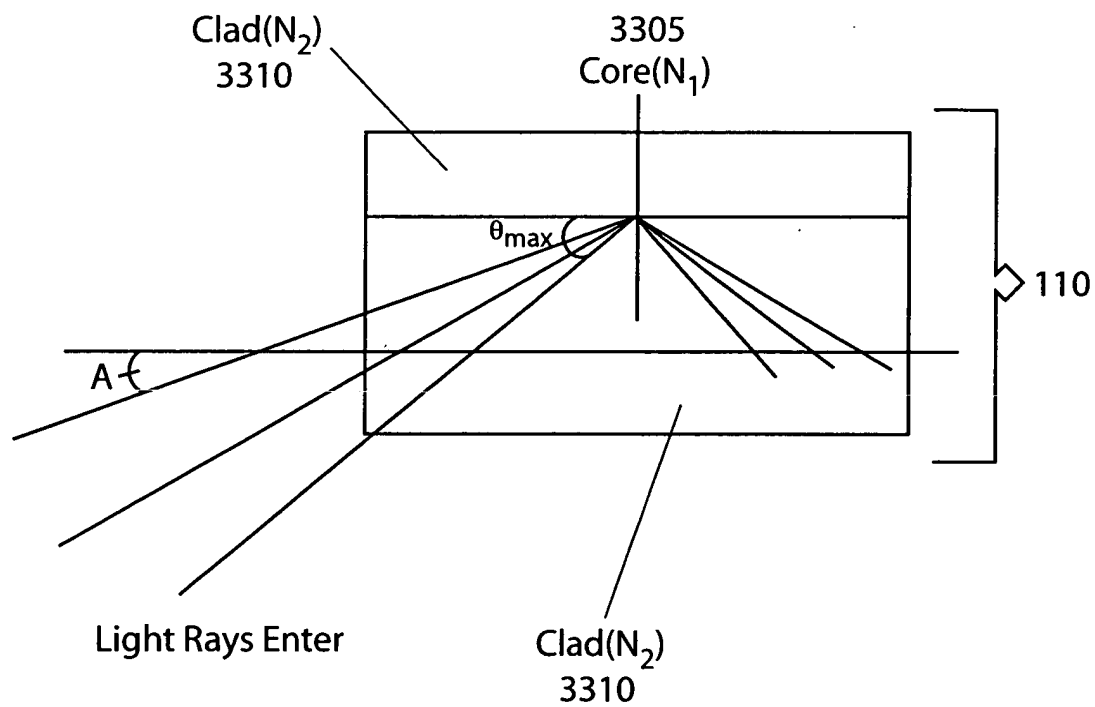


FIG. 33B

FIG. 33C



$$NA = \sqrt{(N_1)^2 - (N_2)^2}$$

FIG. 33C

3400

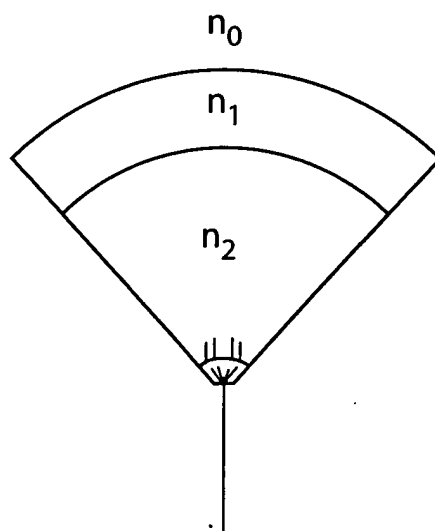


FIG. 34A

00021037 050304
100000 20070600

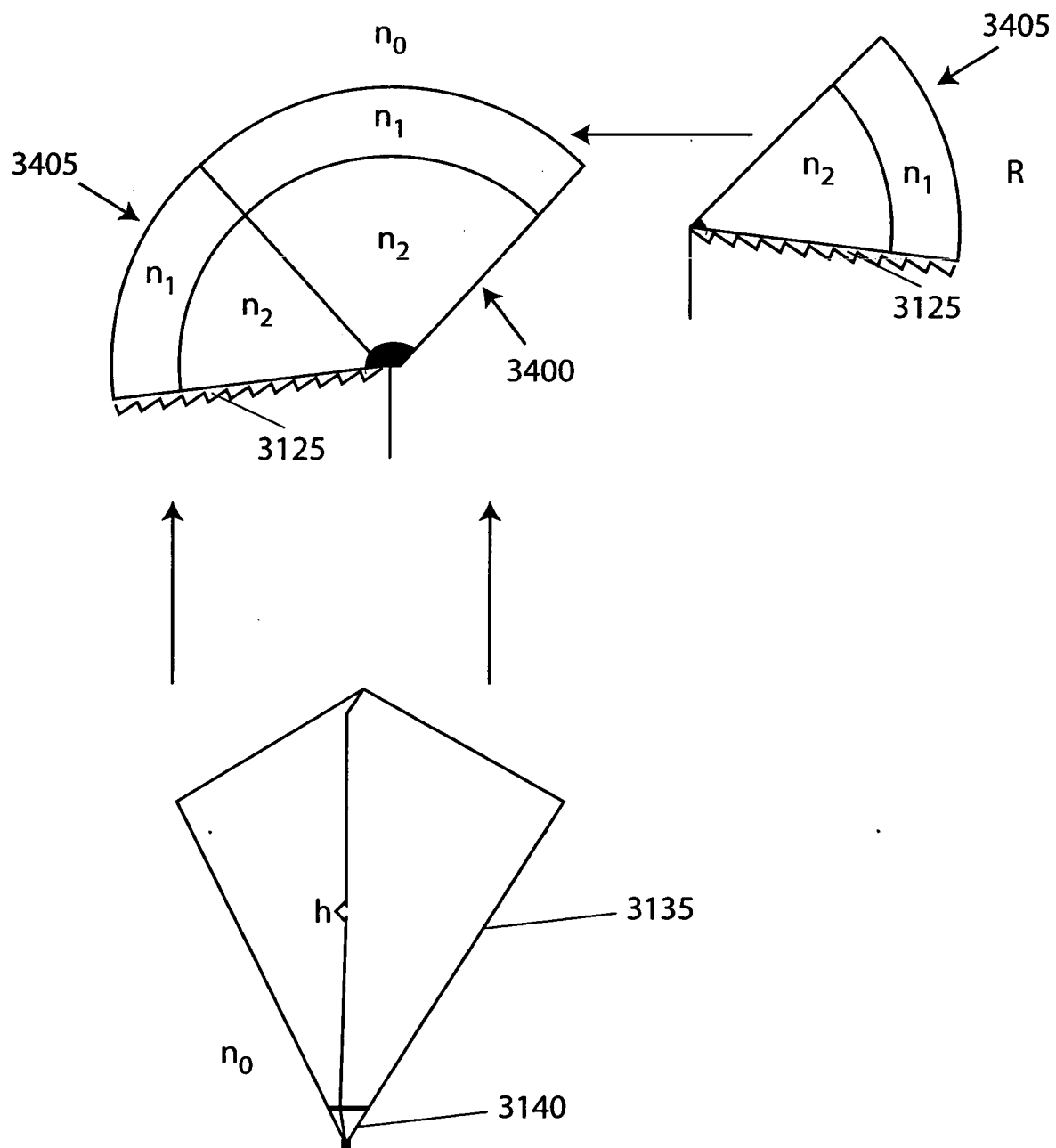


FIG. 34B

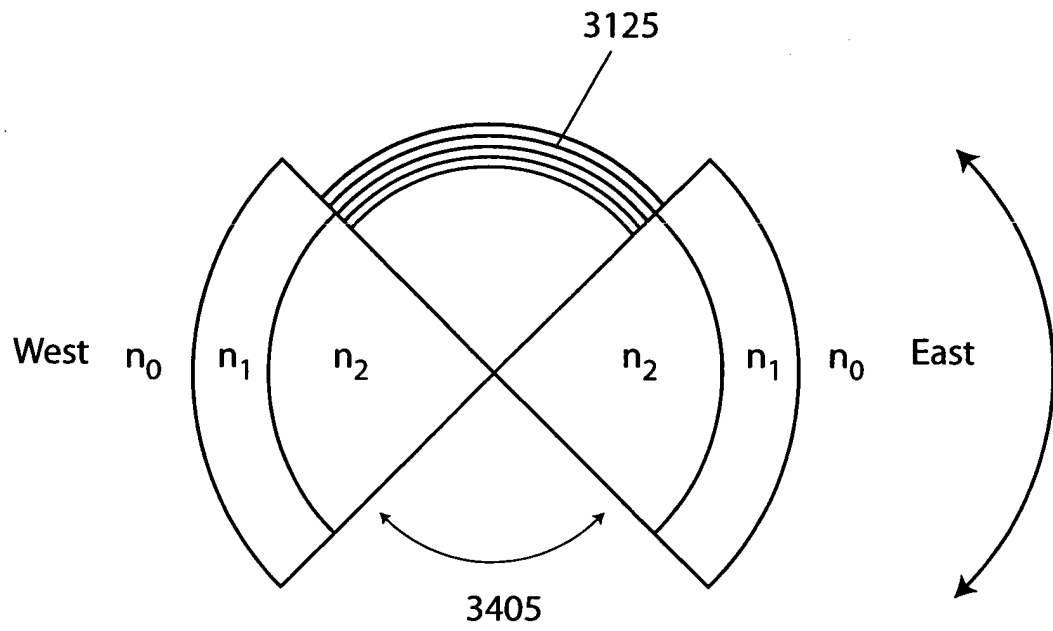


FIG. 34C